



GSX Services, Inc.
Emergency, Remedial &
Technical Projects Group
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ACC-1

June 26, 1985

George Saunders
McDonald Douglas Corporation
P.O. Box 516
St. Louis, MO 63166

Dear Mr. Saunders:

GSX Services, Inc.(GSX) is pleased to provide McDonald Douglas Corporation (MDC) with a proposal for the thermal disposal of MDC explosive devices. The methodology and procedures detailed in the technical and Annex sections were developed to provide MDC with the most efficient and cost effective disposal option, while also offering an environmentally sound and safe treatment program.

GSX is confident of our capabilities and ability to effectively and successfully serve MDC on this project. Any questions you may have concerning the proposal should be directed to the list of contacts provided in the proposal.

Thank you for your consideration of GSX Services, Inc. and we look forward to working with you.

Sincerely,

James V. Noles
Manager
ERT Projects Group

cc: D. Stubbs

GENSTAR
A Genstar Waste
Services Company


R00136629
RCRA RECORDS CENTER

MCDONALD DOUGLAS CORPORATION

PROPOSAL FOR EXPLOSIVE WASTE DISPOSAL

Prepared By:

**GSX Services, Inc.
(Formerly Triangle Resource Industries)
a wholly owned subsidiary of GSX CORP.
Watlington Industrial Road
Reidsville, NC 27320**

Emergency, Remedial, and Technical Projects Group (ERT)

MCDONALD DOUGLAS CORPORATION

PROPOSAL FOR EXPLOSIVE WASTE DISPOSAL

This proposal is submitted to McDonald Douglas Corporation (MDC) for the administration, handling, packaging, transportation, and disposal of explosive, exothermically reactive, and shock sensitive chemicals.

Any questions regarding this proposal can be addressed to

Mr. James V. Noles
GSX Services, Inc.
P.O. Box 210
Reidsville, NC 27320

Phone inquiries may be made for the following subjects to the persons listed below.

Total Proposal - J.V. Noles	919-342-6106 800-334-5953
Technical Proposal - J. Smith	919-342-6107 800-334-5953
Qualifications Package - J. Danes	919-342-6108 800-334-5953

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SECTION 1.0

SECTION I

EXECUTIVE SUMMARY

GSX Services, Inc. (GSX) has prepared this proposal in response to an invitation to bid issued by McDonald Douglas Corporation to package, transport, and dispose of explosive, shock sensitive, and exothermically reactive materials. GSX services encompass every phase of the treatment operation from permit acquisition; to material handling and treatment; to documentation of the results; to dealing with the media. To provide the information requested, the proposal is organized into Technical, Qualifications, and Business sections as follows:

TECHNICAL PROPOSAL. This section explains how GSX Services, Inc. (GSX) intends to meet all of the technical work elements outlined in the invitation to bid.

While on site, GSX will conduct health monitoring for its employees and can provide the same such health monitoring for any subcontractor or McDonald Douglas personnel assigned to the on-site project. An on-site Health and Safety Officer will ensure that the respiratory protection, decontamination protocol, and sampling safety procedures are followed. GSX will maintain personal protective equipment for multiple levels of safety.

QUALIFICATIONS. This section highlights the specific advantages of choosing GSX to conduct the work related to this project. There are a number of clear reasons why McDonalds Douglas should select us for this assignment:

- availability of the experienced project team specified in the proposal
- extensive experience with reactive waste handling and disposal
- extensive experience with explosive, shock sensitive, and exothermically reactive waste handling and disposal
- the best, in our opinion, quality assurance program in the field of remedial action contracting.

This section also identifies key personnel proposed for this project. Relevant aspects of each individual's prior experience is highlighted together with the role they will play in this project. Additionally, enclosed in this section are summaries of other project experience, a list of references, and letters of commendation from several clients for whom GSX has performed thermal disposal operations.

SECTION 2.0

SECTION 2.0

SECTION 2

TECHNICAL PROPOSAL

INTRODUCTION

The Technical Proposal outlines GSX methods and procedures for handling explosive, shock sensitive, and exothermically reactive materials. GSX is qualified, capable and experienced in handling other waste materials, situations, and conditions, but will limit the presentation of GSX's handling protocols to those of pertinence the to MDC Request for Proposal for "Explosive Waste Disposal".

GSX's staff of professionally trained explosives experts have developed a program for effectively handling, transporting, and disposing of explosive, shock sensitive, exothermically reactive, and pyroforic materials. GSX's program is called **THERMODYNAMIC TREATMENT**. It capitalizes on the inherent thermodynamic properties of the materials for disposal to breakdown the original compounds and convert them to stable by-products. The program provides a disposal outlet for reactive materials that previously had no legal disposal outlet, either through regulatory limitations or restrictions imposed by treatment and disposal facilities. The program minimizes the risks associated with the disposal of these materials and allows a legal way for generators to remove from their property materials that are inherently dangerous and reduce the risks to which their employees are exposed. The program was developed and is operated by GSX's Emergency, Remedial, and Technical Projects Group.

ANTICIPATED PROBLEMS

Several potential problems may be anticipated at any hazardous waste site. These, and GSX's approach to their resolution are summarized below:

1. **Unexpected Regulatory/Legal Delays**--To minimize the potential for this problem to impede any project, Jim Noles, Dave Sprinkle, Dan Jones, Larry Johnson, and Jackie Danes have been included in the project team. Jim Noles is GSX's Southeastern Facility Manager and Manager of GSX's Emergency, Remedial, and Technical Projects Group; Dave Sprinkle is GSX's Director of Facility Operations; Dan Jones is GSX's Director of Community and Governmental Affairs; Larry Johnson is GSX's Director of Health, Safety and Environmental Affairs; Jackie Danes is Projects Coordination Manager, for GSX's ERT Projects Group. All will be available to coordinate activities and handle legal, public relations, and regulatory problems.
2. **Weather Delays**--Delays due to inclement weather cannot be directly controlled. The necessary authorizations to conduct the Thermodynamic Treatment operation will be requested for a period of time to allow for possible delays due to weather.
3. **Site Security Problems**--GSX will secure the site prior to any material handling or treatment operations.

2.1 PRE-OPERATIONAL PHASE

GSX conducted extensive pre-operational studies and research to determine the most suitable treatment/disposal site and the best material handling and disposal procedures for MDC components and wastes. This has included site visits and detailed engineering work-ups.

GSX has contracted with Mid-Missouri Limestone Company for the use of their Big Spring Quarry as the treatment site (Drawing I). The quarry is located 12 miles North of Herman, Missouri. The site was inspected by GSX personnel and found to be an excellent location, primarily due to its isolated location and physical layout. The inspection revealed an open limestone quarry with straight sides approximately 40 feet deep. The floor of the quarry is smooth and covered with gravel. A small pond is located at one end and access is made by one road. No geological faults, fissures, or other geological deficiencies are located within the quarry itself. The likelihood of detonation of MDC material causing rock slides is minimal as evidenced by normal quarry operation quarry utilizing 2000 pounds/per day of high explosives and not observing these repurcussion. Minimal repairs to roads and floor surface (grading, fencing, and barriers) will be required prior to the start of the operation.

GSX has determined this site to be more than sufficient for the procedures.

2.2 OPERATIONAL PHASE

2.2.1 MOBILIZATION

GSX will, upon notification from MDC that a Resource Conservation and Recovery Act (RCRA) temporary treatment, storage, and disposal (T/S/D) permit has been secured from the state and federal agencies, mobilize its personnel and equipment to the Big Spring Quarry and begin the initial modifications of the quarry (road repair, fencing, and barriers). The modification will require approximately two (2) days.

2.2.2 SITE MODIFICATIONS

Some small amount of road grading will be required. The following will be brought to the site and assembled or placed in the quarry.

1. A metal gate to secure the access road.
2. Two office trailers
3. Two refrigerated trailers
4. A Type Two Explosives Magazine
5. B-25 containers to build the holding/storage cells

Locations for the items listed above are provided in Drawing II.

2.2.3 MATERIAL HANDLING AND TRANSPORTATION

Once the MDC materials are properly segregated (by explosives class) and manifested, they will be packaged for transportation. This packaging will involve placing the materials into a Department of Transportation steel container (B-25 6 drum overpack) and securing them for transportation. Reasons for packaging the material in this manner are to reduce the risk of accidental initiation during transportation and to contain any initiation to only a small group of materials.

GSX will then load these containers into a GSX explosives transport vehicle. This vehicle will have all necessary state and federal permits and will be placarded, accordingly. This vehicle, along with GSX escorts, will follow a pre-determined route (reference ANNEX I) to the treatment site during a period when vehicle traffic is minimal. A pre-planned contingency plan will be implemented if any unanticipated problems are encountered during this phase of the operation (reference ANNEX II).

Only specially trained and experienced GSX personnel will be involved in this and any future operations. These operations will only be performed when the proper health and safety equipment are available for use.

2.2.4 SITE SET-UP

When the materials arrive at the site, the B25's will be off-loaded utilizing an all terrain forklift, and placed in specially constructed holding areas. These will prevent premature initiation and allow continued segregation of the materials. (Drawing II). Handling of the explosive waste will be minimized to help preclude premature initiation and possible damage. Drawing II details the location of all trailers and major equipment on-site.

2.2.5 MATERIALS FOR TREATMENT

	Number of Units
Small arm ammunition (20mm 30mm 25mm)	7916
Small arm ammunition (CADS)	1190
Small arm primers	705
Explosive power devices class B	8
class C	179
Hand signal device	54
Detonating fuse (metal clad)	501
Detonating fuse (class C)	1078
Explosive cable (cutter)	14
Explosive release device	59
Rocket motion	9

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Detonators	3
Electric squibs	55
Drugs NOS	1585
Actuating cartridge	51
Torpedo railway	1
Igniters	4
Explosive data sheet	3
Explosive flex	15
Rifle powder	7
Explosive propellant	2872

2.2.6 TREATMENT

GSX has thoroughly researched and studied the waste materials produced by MDC and has developed the safest and most efficient methods for treating and disposing of the explosives. It is GSX's intent to conduct this operation with the greatest degree of safety and obtain the best possible results. Past experience in explosive disposal and an acquired knowledge of the specific materials for disposal allows GSX to better handle these explosive components than other company in the hazardous waste field.

The MDC materials have been separated into three groups for disposal:

- 1) CONTROLLED DETONATION (VENT AND BURN MATERIALS)-Rocket motors and jet thrust units.
- 2) THERMAL DESTRUCTION MATERIALS - All other listed materials (except 20mm ammunition).
- 3) PRIMER DESTRUCTION AND THERMAL BURN MATERIALS - 20mm ammunition.

The Group I materials are those that typically contain larger quantities of propellant explosives (usually Class B). The particular construction of these units necessitates the opening of the device by detonation and then destruction of the propellant by Thermal Treatment. Use of flex-linear shaped explosive charges will allow the devices to be opened without uncontrolled rocketing or explosion. Immediately upon rupture of the device's case, the propellant will be ignited by a thermal charge and destroyed by incineration. This method has been used successfully in past operations involving similar materials. All of these controlled treatments will be performed in a carefully prepared area for the protection of involved parties against fire and fragmentation (Drawing 2).

The Group 2 materials can be effectively destroyed by high-temperature treatment. This will be accomplished by placing selected quantities of these materials within a GSX BURN BOX (Drawing 3) and exposing their cases and contents to temperatures of sufficient quantity and duration to destroy the devices.

The use of the BURN BOX will contain any possible contamination and assure complete destruction of the devices. To further assist in this, quantities of the materials will be limited to less than 20 pounds net weight of materials per BURN BOX. The set-up and operation of the BURN BOX is as follows:

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- 1) Crushed limestone is placed into the BOX to a depth of 10 inches.
- 2) Combustible materials (pallets and scrap lumber) are placed on top of the limestone to a depth of 12 inches.
- 3) A fine mesh grill is then secured over the combustible materials (4-10 inches).
- 4) The materials are then placed on the lower grill in a single layer.
- 5) A second fine mesh grill is then secured over the materials.
- 6) Diesel fuel is then added to the combustible materials and igniters are placed inside of the BOX. The igniters are then connected to electric blasting caps and remotely initiated.
- 7) After the fire is out and a suitable time for cooling has been allowed, the materials will be inspected to insure that all of the materials have been destroyed. If a device is found to have not been destroyed it will be removed and consumed in the next treatment.

Treated in such a manner, GSX can control the destruction process to assure that all components are destroyed and contained within the BOX. This will allow for easy collection of metal and carbon by products for containerization and landfill disposal.

Group 3 materials will be treated in a modified BURN BOX (Drawing 4) which will allow for the destruction of the primers prior to the thermal destruction of the propellant and tracer elements. This will be accomplished by placing Class C explosive Primacord (200 grain) across the contact surface of the primer and shell casing. These will then be connected to electric blasting caps and remotely detonated. Immediately following this, the diesel and gasoline thermal sources would be ignited to incinerate the propellant and tracer elements. Again, all debris will be contained in the BOX and then containerized for final disposal.

All of the procedures detailed in this section have been performed on past projects and are safe and practical applications for use in disposing of the MDC materials. Research and examination have covered all possible methods and these are best suited for use on this project.

GSX SERVICES, INC.

2.2.7 ENVIRONMENTAL MONITORING

GSX will monitor the environmental impact of the treatment operation as detailed below. Air monitoring and ground motion monitoring results may be provided immediately following their determination. Analytical results for soil samples will be forwarded immediately upon their availability from the laboratory.

2.2.7.1 AIR MONITORING

GSX direct reading air monitoring equipment will consist of instrumentation capable of determining toxics and combustibles, total organic vapors down to 0.1 ppm, and % O₂. Background readings will be taken prior to treatment. Following treatment, GSX personnel wearing appropriate protective clothing will approach the treatment site from downwind and monitor the atmosphere between the breathing zone and the ground.

2.2.7.2 GROUND SAMPLING

For any treatment operation conducted directly on the ground, composite surface soil samples will be collected prior to and following treatment. The pre-treatment samples will establish background levels for organic materials in the soil. Post-treatment samples will provide information concerning possible contamination or the presence of residue. Samples will be appropriately labeled to distinguish pre-and post-treatment samples.

2.2.7.3 AIR BLAST MONITORING

GSX will provide air blast monitoring that will equal or exceed monitoring for air over pressure from 100 - 150 decibels flat. A permanent record of this pressure reading will be recorded for submission submitted after each detonation or series of detonation.

2.2.7.4 GROUND MOTION MONITORING

Ground Motion monitoring from 0.02"/sec - 4"/sec will be provided using a seismograph. A permanent record of the peak readings submitted after each detonation or series of detonations.

2.2.8 POST - TREATMENT

Any liquid or solid waste resulting from the explosive destruction operation will be packaged and disposed of in an EPA approved disposal facility. Certification of disposal will be provided. GSX is extremely qualified to handle the "conventional" disposal of non-explosive waste resulting from the treatment operation. This is evident from the Qualifications Section.

2.8 POST TREATMENT

Following each treatment operation, GSX personnel will assure the destruction of each device and its contents. Any components or devices not destroyed will be collected and subjected to additional treatments until destroyed.

All debris and material produced as a result of the treatment process will be containerized and removed from the site for disposal. The Big Spring Quarry will be returned to its pre-operational condition. This will be assured by Mid-Missouri Limestone Company officials.

2.3 TECHNICAL OPERATIONS PLAN

2.3.1 RISK ASSESSMENT

An inventory of the stored explosive waste materials indicates that the quantities and types of materials stored represent a significant hazard to personnel and structures located nearby. The characteristics that should be considered include flammability, shock sensitivity, and explosiveness.

GSX recognizes the risks involved and feels confident that the entire operation can be completed without harm to personnel or the environment.

2.3.2 SITE SAFETY

The health and safety of all GSX, client, state and federal personnel that are on-site, as well as the safety of the public and protection of the environment, shall be of paramount importance. The general health and safety policies and procedures have been developed with this in mind and implementation of these guidelines will be the responsibility of the GSX Health and Safety on-site personnel and the GSX Project Manager. These policies (reference ANNEX 3) will take precedence over cost and scheduling of all site project activities. All GSX, MDC, and state and federal representatives and visitors shall abide by these rules.

2.3.3 REGULATORY INTERFACES

Treatment and disposal of MDC materials must be accomplished in compliance with all applicable local, state, and federal regulations covering identification, classification, packaging, labeling, material transportation and disposal. This requires interfacing with regulatory and emergency response agencies involved in the operation.

SECTION 3.0

SECTION 3

QUALIFICATIONS

3.1. ABOUT GSX SERVICES, INC.

3.2. PROJECT MANAGEMENT

3.3. GSX EXPERIENCE

3.4. ORGANIZATION AND KEY PARTICIPANTS

3.5. REFERENCES

3.6. LETTERS OF COMMENDATION

3.7. CERTIFICATIONS AND LICENSES

QUALIFICATIONS

Introduction

GSX Services, Inc., formerly Triangle Resource Industries, is a service organization specializing in managing hazardous wastes generated by industry, institutions, government agencies and medical or research organizations. GSX offers a complete set of services from routine waste pickups, to emergency response, to remedial action projects of short or long duration, to the operation of treatment and disposal facilities for hazardous wastes. Section 3.1 introduces GSX Services, Inc. and Section 3.2 explains GSX's project management structure. Exemplary projects GSX has undertaken and successfully completed in recent years are summarized in Section 3.3, GSX Experience. Resumes of some of GSX's project dedicated employees are included in Section 3.4. These resumes include summaries of GSX project experience. GSX has assembled a project team with a great deal of experience directly related to the clean-up of drummed material, contaminated soil, contaminated tanks, and explosive material.

GSX is proud of its accomplishments in the area of hazardous waste management and clean-up. We encourage you to contact the references provided at the end of Section 3.5. These references will provide the best insight into our ability to provide high-quality, professional services on a timely basis. We have provided clean-up services for difficult hazardous waste management projects for State and Federal governments and various generators of hazardous waste. Section 3.6 provides certifications of GSX Explosives Technicians and licenses. Section 3.7 provides copies of letter of commendation GSX, has received for our outstanding performance on jobs requiring explosive disposal.

GSX SERVICES, INC.

SECTION 3.1

ABOUT GSX SERVICES, INC.

GSX Services, Inc. was formulated in the fall of 1984 as the result of the acquisition of SCA Chemical Services, Inc. (SCA) by Waste Management Acquiring Company (WMAC), a company made up, jointly, of Waste Management, Inc. and Genstar Corporation. Assets of SCA Chemical Services were distributed between Waste Management, Inc. and Genstar Corp. by a Department of Justice decree that prevented the formulation of monopolies, in the hazardous waste industry, in certain geographical locations. The result - Genstar, a \$ 3 billion corporation, acquired Triangle Resource Industries, a division of SCA Chemical Services, Inc. and certain properties and facilities of SCA Services. Waste Management acquired the remainder. Genstar quickly formulated GSX Corp., the division that would manage solid and hazardous waste. Within this establishment, GSX Services, Inc., hereafter referred to as GSX, handles the hazardous waste service responsibilities.

GSX Services, Inc. has a combined fourteen years of experience in the management of hazardous wastes. GSX operates RCRA-permitted hazardous waste transfer facilities at the following locations:

<u>LOCATION</u>	<u>TOTAL SQUARE FOOTAGE</u>
Reidsville, North Carolina	64,000
Laurel, Maryland	12,000
Greenbrier, Tennessee	60,000

Additionally, GSX operates a secure chemical landfill in Pinewood, South Carolina on 272 acres of land and has been doing so for six years. Each GSX facility enjoys an excellent operating record.

GSX serves the entire nation. The bulk of GSX services fall into the following categories:

1. Packaging of less than drum size quantities of laboratory chemicals (labpacks)
2. Preparation, packaging, transport, and disposal of less-than-truckload quantities of hazardous waste.
3. Scheduled hazardous waste site clean-ups.
4. Emergency Response Services (24-hours, 7 days per week) for hazardous waste spills and releases; decontamination operations; health and safety monitoring; remedial action operations; site reconnaissance activities; sampling operations; and explosives and shock sensitive material treatment/disposal activities. GSX operates response teams at three facilities.
5. Retailing of safety supplies and packaging materials.

6. Personnel training in hazardous waste including health and safety, regulatory compliance, and employee health monitoring programs.

GSX is currently servicing four state and federal contracts for providing emergency response, remedial action, and waste collection services in designated geographical areas. These contracts include the South Carolina Contract for Small Abandoned Hazardous Waste Sites; the South Carolina contract for Clean-Up Services & Scheduled Remedial Actions; the U.S. Environmental Protection Agency ERCS Zone II contract providing emergency and remedial action services; and the State of Florida Amnesty Days Contract for collection of hazardous waste from homeowners small quantity generators, schools, etc. GSX fulfilled the latter two contracts through 1984 and has received renewals for these contracts through 1985.

The success of GSX can be traced back to the implementation and operation of a Quality Assurance Program which is recognized as perhaps the best in the commercial hazardous waste service industry. Some key aspects of the Quality Assurance Program are:

- Environmental auditing and prequalification of treatment and disposal sites to which client wastes ultimately go. GSX has a limited list of disposal facilities it has approved for its own use.
- Unannounced audits of GSX facilities, as well as field operations, are performed to detect potential deficiencies and permit corrective action to be taken immediately, as well as to allow follow-up monitoring.
- A staff of field personnel trained and regularly updated on spill response, hazard recognition and response, selection of appropriate protective clothing, material handling, drum packaging, manifesting, safe driving techniques and practices. The majority of GSX field personnel are chemistry and related science majors. GSX promotes the practice of training science degree personnel to be drivers and not drivers to be chemists.
- Strict adherence to health and safety procedures, and the use of the best available safety and field equipment.
- Well developed programs for maintaining equipment and material supplies and for ensuring proper vehicle and equipment preventative maintenance.
- Labpack and intracompany audits to ensure compliance with handling and packaging protocol.

SECTION 3.2

PROJECT MANAGEMENT

GSX's management philosophy is to complete each project in a safe and timely manner and abide by all applicable regulatory and contractual rules and guidelines. Furthermore, it is to promote employee training and development, exposing employees to varied situations, hence diversifying their skills, experience, and knowledge. This provides us with a broad spectrum of institutionally and on-the-job trained personnel to commit to varied projects.

All GSX projects are run by a Project Manager. The selected Project Manager's background must include both demonstrated technical and administrative skills.

The Project Manager is responsible for day-to-day project operations. His/her duties include:

- . Meeting with the client.
- . Advising the Project Director of program status on a regular basis.
- . Reviewing all project work for completeness and adherence to contractual obligations.
- . Coordinating the various project work elements between the interdisciplinary staff elements.
- . Controlling project costs.
- . Monitoring project schedules.
- . Assuring project documentation.

The Project Director is responsible for overall administrative, financial, and technical project control. He reviews the project's status with the Project Manager on a regular basis. The Project Director and Project Manager review expenditures to-date, work accomplished, future manpower requirements, and conformance to scheduled project milestones. The Project Director also must approve change orders.

A final important role of the Project Director is to provide the client with direct access to a GSX corporate decision-maker, to assure swift action on any project-specific concerns that may arise.

Safety, personnel medical surveillance, and general quality control are integral parts of all GSX projects. Frequently, these areas are coordinated by someone not involved in the day-to-day clean-up operations--this is an effort to promote objectivity.

SECTION 3.3

GSX EXPERIENCE

GSX began operations in 1975 in the packaging, transporting, and disposal of laboratory quantities of hazardous wastes and material in less than truckload quantities per client. Today, GSX is the nation's largest packager, transporter, and disposer of waste laboratory chemicals, disposing of over 12 million pounds of labpack wastes annually, for large and small quantity generators, alike. Eighty-five percent of GSX's annual business results from servicing small quantity generators and handling laboratory quantities of materials for government agencies and research, medical, and educational facilities.

Prior to GSX'S emergence into the field of hazardous waste management in 1976, shipment of generically different, but compatible materials was not allowed by the Department of Transportation (DOT). GSX wrote the original DOT Exemption for packing generically different, but compatible, materials in the same DOT shippable container (known as a lab pack or mixed lab). Since then GSX has received approval for several modifications of the Exemption.

GSX is licensed to transport hazardous wastes throughout most of the U.S., covering territories from Maine to Florida and Colorado to the East Coast. GSX's careful selection of highly skilled drivers is exemplified by GSX's good driving record.

Besides, GSX's routine lab packaging business, GSX has conducted numerous specialized operations that involved the lab packaging of hazardous chemicals. Some were conducted as parts of larger remedial activities at abandoned hazardous waste sites and others as emergency response actions ordered by U.S. EPA.

Still, in another area, GSX has participated in area wide hazardous waste collection programs for homeowners, businesses, generators, and educational institutes in the Florida, Virginia, Tennessee, South Carolina, and North Carolina. The programs were similar on a number of points. All were major lab packaging jobs involving some bulking of compatible materials. All required a thorough knowledge of hazardous waste packaging, marking, and transportation regulations. All required being able to handle volumes of unknown materials and maintain accurate records for transportation, billing, and participant documentation. All required capabilities to respond to spills or releases and capabilities to handle reactive, explosive, and exothermically reactive chemicals. These programs also required high levels of organization and cooperation with state and local officials. These programs are summarized below.

In May 1984, the State of Florida instituted a bold statewide hazardous waste collection program for homeowners, businesses, schools, universities, and industry whereby each party was eligible to bring 450 pounds or one 55-gallon drum of hazardous waste to a central collection station for disposal at U.S. EPA licensed TSD facilities. The State of Florida would pay for the cost of the disposal of these initial quantities of material. Beyond that amount, individual parties were responsible for disposal costs. The purpose of the program was to remove hazardous wastes from homeowners, and other members of the unregulated community; increase awareness of the dangers of improper handling of hazardous wastes; heighten concern over the proper handling and disposal of hazardous materials; provide a mechanism for achieving environmentally sound disposal of hazardous materials that would normally fall outside the realm of hazardous waste regulation; and provide incentive for the proper disposal of these harmful materials. The program is designed to run for three (3) years, with the operation of collection stations occurring twice annually. Each Phase of the operation focuses on different geographic regions of the State.

On May 1, 1984, GSX began operation of the first Florida Amnesty Days Hazardous Waste Collection Station. The station, located in Dade County, Florida, was one of seventeen (17) collection stations operated during the two month period and servicing a seven (7) county-wide area. GSX personnel operated main and satellite stations to most efficiently service the clientele. Participation was enormous and interest high due to large-scale publicity campaigns and convenience of participation. GSX provided experienced chemists, an explosives technician, and an industrial hygienist to handle the multitude of materials and situations to be encountered in a job of this magnitude. Materials were lab packed or bulked, depending upon suitability. Explosive materials were isolated and stored in a Type 3 mobile explosives magazine until such time as arrangements could be made for disposal under GSX's Thermodynamic Treatment program for shock sensitive, explosive, and exothermically reactive materials. A total of two (2) treatment/disposal operations were conducted in two different locations for sensitive materials of this nature. The following breakdown of materials was collected during Phase I: 1,400 mixed lab drums; 350 bulk solids and liquids drums; 175 lb of explosives; 2,000 lb of reactives; 2,000 lbs of PCB liquids and solids; 4,000 aerosol containers; 175 cylinders; 10 lb of low level radioactive waste, 400 gal of incineratable biological waste. The success of Phase I of the Amnesty Days Program has assured GSX the remaining phases of the three (3) year Program. During October and November 1984, GSX conducted Phase II of the Amnesty Days Program.

Additionally, GSX has provided hazardous waste collection services for homeowners, in Wisconsin and in several New England municipalities, particularly in the Boston, Massachusetts area. GSX conducted a Hazardous Waste Collection Program in our home town of Reidsville, NC during April 1985. This was met with much enthusiasm and interest on the part of local citizens.

GSX has conducted a number of large scale laboratory clean-out and collection services for individual schools and entire school systems that required the same technical and coordination skills that the municipality collection services required, ie. thorough knowledge and familiarity with chemical hazard classification, packaging requirements,

emergency handling procedures, federal and state transportation and hazardous waste regulations, and good personal relations and administrative skills. Several of the programs GSX has conducted of this type are described below.

In 1983 GSX was awarded a competitively bid contract for the total statewide hazardous waste cleanout of all Virginia Department of Education junior high schools, high schools, and junior college and university laboratory wastes. This effort was coordinated with the State of Virginia's Division of Solid and Hazardous Waste Management and consisted of predesignating 7 open air locations in Virginia as temporary TSD facilities to which participating schools dropped off waste for lab packaging, transportation, and disposal of those materials by GSX. Sixty-five schools participated. The entire collection operation took approximately 7 weeks. For this project, GSX received a letter of commendation from officials involved in the project, and from the State of Virginia.

In April of 1983, GSX consolidated wastes from Horry County, SC schools at one collection station.

In May of 1983, GSX conducted a collection station cleanup operation of the Memphis, TN City Schools. Thirty schools were involved. Materials from 15 schools were dropped off at a central location while materials from the remaining schools were picked up from individual schools. The project required one week for completion. The materials collected totalled 50 drums containing 10,000 lbs. of waste and 200 lbs. of reactive materials.

In April of 1982 GSX conducted a waste consolidation program for the Hillsborough County, FL Public School System that consisted of consolidating wastes from 36 schools at 12 locations.

GSX has also conducted a number of laboratory clean-outs where the materials were picked up at individual generator sites. Several of these are mentioned below.

In 1984 GSX conducted a laboratory clean-out of all Roanoke City and Roanoke County, Virginia secondary schools and community colleges and conducted a similar program for the middle and high schools in our home town of Reidsville, North Carolina. Each of these clean-outs involved the safe handling and disposal of explosive laboratory chemicals.

GSX completed a laboratory clean-out service for the City of Oklahoma School System where pickups were made at individual schools. Numerous unknown materials had to be dealt with in that cleanout.

In addition to waste collection services, GSX offers a broad spectrum of remedial and emergency response services. GSX is now recognized as one of the premiere clean-up contractors in North America and as an industry leader in hazardous waste treatment and disposal. Between 1982 and 1983, GSX successfully cleaned up several dozen sites of abandoned or stored hazardous wastes, either on an emergency or scheduled basis. The contracts for these jobs ranged in size from a few thousand dollars to the clean-up of several drums at the scene of a truck accident to several million dollars for the stabilization and clean-up of four Superfund sites.

In 1984 alone, GSX responded to over 14 emergency response operations; began and successfully completed thirty-seven planned remedial action projects; conducted nineteen Thermodynamic Treatment operations for explosive and exothermically reactive materials; completed nine ERCS zone contracts for the U.S. Environmental Protection Agency; and completed two Amnesty Days Projects, each of two months duration, for the State of Florida as authorized under their Water Control Act. These technical and special projects were conducted in fourteen states, from the Atlantic to the Pacific coasts, and from Minnesota to Florida. They were conducted in five separate U.S. EPA regions (III, IV, V, VI, IX).

There is no company better prepared to handle the responsibilities and coordinations associated with the McDonald Douglas project. Our experience and knowledge in hazardous waste safe handling procedures and regulations are unsurpassed. The GSX policy of using only carefully trained chemists and related science majors, skilled drivers trained in hazardous waste response, field trained specialists in explosives and industrial hygiene, and employees knowledgeable in other pertinent academic areas makes GSX an unbeatable source of talents and resources, capable of conducting the clean-up services with professionalism and the enthusiasm the project deserves.

Summaries of several projects GSX has completed are provided that will further represent GSX experience and capabilities.

Date: April 10, 1985

Client: Carolina Commercial Heat Treating

Address: Grooms Road, Reidsville, NC

Contact: Derio Archer

Phone: (919) 342-0308

Type of Action: Thermodyremic Treatment

Material Description: Two pounds of picric

Acid requiring treatment.

Storage Conditions: The materials were stored in a laboratory inside
of plant.

Hazards: Picric Acid is extremely heat and shock sensitive.

GSX Actions: GSX removed the containers to a nearby landfill and safely
deteriorated the materials.

Date: April 5, 1985
Client: Edgecombe General Hospital
Address: 2901 N. Main, Tarboro, NC
Contact: Charles T. Garrett
Phone: 919-641-7111

Type of Action: Thermodynamic Treatment

Material Description: Two ounces of dry Picric Acid

Storage Conditions: Materials were stored in the emergency room along with various other flammable or reactive chemicals.

Hazards: Picric Acid is extremely sensitive to shock or heat.

GSX Actions: GSX removed the materials to a landfill and safely decontaminated the materials. Local and State personnel observed the treatment.

Date: July 21, 1983

Client: Georgia Environmental Protection Division

Address: Land Protection Branch, 270 Washington St., Atlanta, Ga. 30334

Contact: Shirley Maxwell

Type of Action: Thermodynamic Treatment.

Material Description: Four pounds of dry picric acid and 100 g of 2,4-Dinitrophenylhydrazine required treatment.

Storage Conditions: The materials were stored in a laboratory chemical storage cabinet.

Hazards: Picric acid is extremely heat and shock sensitive when the water content is less than 10%.

GSX's Actions: GSX removed the materials to a nearby police firing range, and under the scrutiny of SWAT and Georgia EPA, safely detonated the materials. Fire control measures were taken in the event of a brush fire and air monitoring was conducted prior to and following the treatment process.

DATE: July 15, 1983

CLIENT: United States Environmental Protection Agency (USEPA)

ADDRESS: Research Triangle Park, Durham, NC 27711

CONTACT: Jewell Finch Morris

PHONE: (919) 541-2613

TYPE OF ACTION: Emergency removal, packaging, and thermodynamic treatment of shock sensitive chemicals

MATERIAL DESCRIPTION: Thirty-nine pounds of tetrahydrofuran, butyl ether, diethyl ether, dioxane, and boron trifluoride etherate required treatment.

STORAGE CONDITIONS: The materials were stored in an outdoor refrigerated chemical storage shed.

HAZARDS: Spontaneous combustion and detonation. Several of the diethyl ether containers exhibited corrosion. The condition and age of the chemicals made their continued storage a threat to employees, the storage shelter, and surrounding structures.

TRI'S ACTIONS: TRI was first informed of the existence of these chemicals on August 14, 1983, while performing two other thermodynamic treatment jobs. TRI assisted USEPA in acquiring an emergency treatment permit and the following day TRI packaged the materials, transported them to the permitted disposal facility (local landfill), and treated them. The entire operation required 3.5 hours. Air monitoring, pre- and post-blast, indicated no residual, uncombusted materials. Soil samples were taken prior to and following the detonation.

DATE: July 14, 1983

CLIENT: Monsanto Corporation

ADDRESS: 3025 Cornwallis Road, Research Triangle Park, Durham, NC 27709

CONTACT: Dave Batchelor, Supervisor, Safety Services, Environmental

PHONE: (919) 549-8111

TYPE OF ACTION: Removal and Treatment of Shock Sensitive Materials

MATERIAL DESCRIPTION: A total of 9 lbs of picric acid, 2,4-dinitro-phenylhydrazine, dinitrophenol, and various peroxides such as dicumyl peroxide, cumene hydroperoxide, methyl ethyl ketone peroxide, 2,4-dichlorobenzoyl peroxide, and benzoyl peroxide required treatment.

STORAGE CONDITIONS: The materials were located in several labs throughout the Monsanto building. Some of the materials were refrigerated and required temperature control provisions during transport and set-up.

HAZARDS: Spontaneous combustion and detonation

TRI'S ACTIONS: TRI received the necessary permit for the treatment and packaged and transported the materials to the detonation site on Monsanto property. The limited size of the treatment site required the use of TRI's specially constructed "Shock Boxes" for blast containment and increased blast direction control. A series of four detonations, using two "Shock Boxes" each time, achieved complete thermal destruction of the materials. Air monitoring was conducted prior to and following each treatment process.

DATE: July 14, 1983

CLIENT: NIEHS

ADDRESS: P.O. Box Box 12233, Research Triangle Park, NC 27709

CONTACT: Valeria Shropshire

PHONE: (919) 541-3384

TYPE OF ACTION: Thermodynamic Treatment of Shock Sensitive Materials

MATERIAL DESCRIPTION: A total of 47 lbs of the following partial list of chemicals required treatment; benzoyl peroxide, peracetic acid, dinitrophenylhydrazine, butylhydroperoxide, dinitrophenol, chloro-perbenzoic acid, picric acid, and diethyl ether.

STORAGE CONDITIONS: All materials were stored in an air conditioned chemical storage area at the NIEHS complex.

HAZARDS: Spontaneous combustion or detonation of the materials.

TRI'S ACTIONS: TRI arranged for the use of non-client property (a landfill) for the treatment process, acquired the necessary permits, and made the appropriate notifications. TRI packaged, manifested, transported, and detonated the materials in an operation that took 5 hours. Present during the treatment operation were North Carolina Department of Human Resource, NIEHS, and landfill representatives.

DATE: May 13, 1983

CLIENT: Old Dominion University (ODU)

ADDRESS: Norfolk, VA

CONTACT: Eric Raudenbush, Radiation and Health Safety Officer

PHONE: (804) 440-4495

TYPE OF ACTION: Emergency Removal and Thermodynamic Treatment of Shock Sensitized Materials

MATERIAL DESCRIPTION: Eight hundred pounds of diethyl ether, 3 lbs of picric acid, 3 lbs of sodium metal, and more than 5 gal of additional diethyl ether required treatment.

STORAGE CONDITIONS: The eight hundred pounds of diethyl ether were discovered in a storage shed immediately adjacent to the university's stadium. Graduation ceremonies were scheduled to take place in the stadium within two days of the discovery. The remainder of the materials were stored in laboratory storage cabinets.

HAZARDS: The storage of 800 lbs. of diethyl ether in an unrefrigerated shed, adjacent to a stadium soon to be filled with people, represented an imminent hazard, as determined by the Virginia State Health Department, Division of Solid and Hazardous Waste Management.

TRI'S ACTIONS: TRI obtained an emergency T/S/D permit on behalf of ODU in two days. TRI manually removed the 55-gal drums of diethyl ether from the shed. A mobile crane, with sling, placed the drums in a dumper trailer, lined with oil-dry to function as a bunker. TRI individually transported the drums to the City of Norfolk landfill for thermodynamic treatment. The smaller quantities of diethyl ether, picric acid, and sodium metal were transported to the same treatment site in TRI's Type 4 explosives magazine. The materials were detonated in two treatment processes. TRI routinely uses minimum hazard explosives to rupture the chemicals' containers and initiate the treatment process. The heavy gauge steel of the 55-gal drums required high explosives (Class A) to rupture the container walls. The city landfill is directly adjacent to the James River. TRI air monitored from the river and patrolled the river, with City of Norfolk Water Patrol, to restrict channel boat traffic from approaching the disposal site at the time of the detonation.

DATE: April, 1983

CLIENT: Louisiana State University (LSU) Medical Center

ADDRESS: 1542 Tulane Street, New Orleans, Louisiana

CONTACT: George Smith, Safety Engineer for the LSU System

PHONE: (504) 388-8839

TYPE OF ACTION: Thermodynamic Treatment of Shock Sensitive Material

MATERIAL DESCRIPTION: Nineteen pounds of the following reactive or potentially explosive materials required treatment: benzoyl peroxide, picric acid, ether anhydrous, 2,4-dinitrophenyl hydrazine, trinitrotoluene, picramide, t-butyl hydroperoxide, hydrazine anhydrous, white phosphorus, sodium metal, and phenyl hydrazine. Many of the containers showed signs of deterioration and some materials had crystallized. Crystallization in these materials is indicative of chemical instability.

STORAGE CONDITIONS: The materials were stored in chemical storage areas.

HAZARDS: Spontaneous detonation.

TRI'S ACTIONS: TRI applied for and received emergency permitting on behalf of LSU, to perform the detonation. This permit process required the involvement of US EPA Region 6 and represented TRI's first emergency permit acquisition in this EPA Region. The materials were packaged during light work shifts at the medical center and transported in TRI's explosives magazine to the prearranged site for destruction. Air monitoring prior and post to the detonation revealed complete destruction of the materials.

DATE: April, 1983

CLIENT: Davis Hospital

ADDRESS: Cherry St., Statesville, NC

CONTACT: Ed Green

PHONE:

TYPE OF ACTION: Thermodynamic Treatment of Shock Sensitive Material

MATERIAL DESCRIPTION: Two 4-oz. glass bottles of dry picric acid (2,4,6-trinitrophenol) were discovered in a second floor laboratory (40' X 40') of Davis Hospital. Dry picric acid is an extremely sensitive substance and can detonate upon initiation by shock or at temperatures of 300 °C.

STORAGE CONDITIONS: The materials were being stored in a cabinet beneath a laboratory sink located in a very active wing of the hospital.

HAZARDS: The eight oz. of dry picric acid contained sufficient energy of combustion to totally destroy the laboratory and any personnel present should the material have been detonated in the laboratory.

TRI'S ACTION: TRI's Special Projects Section arrived at the hospital and safely removed the explosive materials within 45 minutes after arrival. Removal was scheduled between hospital shift changes to minimize risks and inconvenience to hospital personnel resulting from restricted access to the section of the hospital in question. The material was transported from the hospital in TRI's Type 4 Explosives Magazine to a prearranged detonation site owned by Iredell County. Escort service was provided by the City of Statesville's Police Department. Air monitoring was conducted both pre- and post- to the detonation. The setup was completed in 50 minutes and the detonation successfully completed with no adverse environmental effects as evidenced by air monitoring and post detonation site investigation.

DATE: February, 1983

CLIENT: R.J. Reynolds Tobacco Co.

ADDRESS: Reynolds Boulevard, P.O. Box 854, Winston-Salem, NC 27102

CONTACT: Mike Borgerding

PHONE: 919-777-6165

TYPE OF ACTION: Thermodynamic Treatment of Shock Sensitive Material

MATERIAL DESCRIPTION:

STORAGE CONDITIONS: The materials were stored in laboratory cabinets at room temperature or were refrigerated.

HAZARDS: Some of the materials possessed enhanced explosive characteristics as a result of crystal formation of the virgin materials.

TRI'S ACTION: TRI removed the materials early during weekend hours to reduce exposure risks to employees. Employee concentration was at a minimum. TRI took measures to maintain the temperature of the previously refrigerated materials during transport and disposal setup. All materials were removed to the TRI high explosive Type 4 ATF magazine and moved approximately six (6) miles to a remote predetermined disposal area provided by the client. The materials were successfully detonated in a single treatment process.

DATE: January, 1983

CLIENT: Maguire Nuclear Power Facility

ADDRESS: Highway 73, Route 4, Box 531, Huntersville, NC 28078

CONTACT: Pat Wingo, System Environmentalist, Health Sciences Department

PHONE: (704) 875-1971

TYPE OF ACTION: Thermal Detonation Disposal of Shock Sensitive Material

MATERIAL DESCRIPTION Seventeen pounds of shock sensitive diethyl ether, showed signs of peroxide formation.

STORAGE CONDITIONS: The materials were located in two different buildings at the Maguire Nuclear Power Facility near Charlotte.

HAZARDS: The shock sensitive nature of the materials and the evidence of peroxide formation made the continued storage of these materials an imminent hazard to property and personnel.

TRI'S ACTIONS: TRI's Special Projects Section responded by removing the materials to a predesignated disposal site at the Maguire Nuclear Power Facility near Charlotte for thermal destruction by detonation. The 17# of diethyl ether were safely detonated. TRI monitored the air in the area of the detonation prior to and following the detonation, to determine completeness of combustion. The thermodynamic treatment was completely successful, with all materials determined to be destroyed during combustion.

TOTAL JOB TIME: 4 hours

DATE: August, 1982

CLIENT: Consortium of 10 contributing generators under direct supervision of the South Carolina Department of Health and Environmental Control

ADDRESS: 500 Bull Street, Columbia, SC 29209

CONTACT: Jim Ullery

PHONE: (803) 758-5681

TYPE OF ACTION: Thermodynamic Treatment of Pyroforic, Explosive, and Shock Sensitive Materials

MATERIAL DESCRIPTION: Two 16' X 6" cylinders containing smaller cylinders of pyroforic nickel carbonyl; 120 bottles of laboratory chemicals ranging from peroxidized ethers to picric acid, to trinitrotoluene (TNT); 42 gas cylinders containing oxygen, chlorine, trimethyl aluminum, carbon monoxide, fluorine, others, as well as unknowns.

STORAGE CONDITIONS: The materials were located at the abandoned Bluff Road Superfund hazardous waste site, situated 7 miles outside of Columbia, SC. Their disposal was part of a larger scale clean-up involving disposal of 75% of the on-site waste. The materials included laboratory chemicals and gas cylinders and were found in deteriorating drums and on open ground, exposed to the natural elements. Most of the gas cylinders exhibited signs of corrosion along the cylinders and at the valves. Many of the chemicals exhibited signs of peroxide formation (crystal formation, appropriate coloration, etc.)

HAZARDS: The hazards were enormous. A detonation site had to be found that was remote from the hazardous waste disposal site, from heavily traveled roads, and from population centers. The cylinder valves had to be modified to ensure no leakage during transport. Extreme care had to be exercised in handling two 16' long cylinders containing the pyroforic material nickel carbonyl. An added degree of hazard was introduced by the unknown identity of some of materials.

TRI'S ACTION: TRI pursued and obtained a DOT exemption that allowed the transportation of unknown gaseous materials. This was preempted by developing an ingenious method of eliminating the possibility of leakage through the valves. TRI safely transported the materials at 2 AM, under escort, a distance of 5.5 miles to the disposal site. Preparation of the ground for the detonation required one day. The materials were transported, setup, and detonated over a 2 day period.

Special penetrating devices were used to vent the gas cylinders. The devices, known as Mark 23 and 3 Cutters are antitank weapons used in military operations to disable tanks. The Cutters were carefully positioned with respect to the cylinders so that maximum velocity of the penetrating device was achieved at each cylinder surface. The set-up was tedious at best, with extreme heat and humidity intensifying work conditions.

GSX SERVICES, INC.

SECTION 3.4

ORGANIZATION AND KEY PARTICIPANTS

GSX is pleased to be able to offer experienced and highly trained project personnel. Resumes of key on-site and off-site participants are provided. GSX has a reservoir of personnel with chemical schooling, training, and experience who participate in GSX routine waste handling business and special projects. The various sampling technicians, explosives technicians, equipment operators, etc., required for the project will be chosen from these employees. This is a unique feature of GSX -- the use of highly skilled and degreed chemists or related science majors to perform clean-up operations. This practice and quality control measure is largely responsible for GSX's excellent safety and clean-up performance record.

GSX Explosives Technicians have attended and successfully completed Dupont sponsored Blasting Safety courses and are authorized to instruct others in the use and handling of explosives. These courses include Dupont's "Blasting and Explosives Safety" course and their "Surface Blasting" course. One member of our Explosives Team has seven (7) years training with EOD and three (3) years training with GSX. GSX Explosives Technicians are members of the Society of Explosives Engineers. Additionally, each team member has a strong background in chemistry and related sciences and is aware of the chemical hazards of the materials to be disposed of, as well as, the explosive hazards.

RESUME

NAME: James V. Noles

EDUCATION:

Military Middle Schools, U.S. Army, USASO
Falls Church High School, Falls Church, Virginia
Northern Virginia College, Loudoun Campus, Virginia
George Mason University, Fairfax County, Virginia
Northern Virginia College, Fairfax Campus, Virginia

Business Law and Administration, PRM
Legal Administration
Wildlife and Forestry Management

EXPERIENCE:

Manager, GSX Southeastern Regional Facility; and Manager,
Emergency Remedial & Technical Projects Group March 1984 to present
GSX Services, Inc. (GSX), P.O. Box 210, Reidsville, NC 27320

Facility: Responsible for all employees, operations, projections, and revenue for the 60,000 ft² southeastern regional hazardous waste TSD facility employing 45 persons. Devise budget and spending plans, monitor compliance with all applicable regulatory requirements, manage public relations program, assist regional sales representatives with pricing and sales plans, and administer company policies.

ERT Projects Group: See below

Manager; Emergency, Remedial, and Technical Projects Group Sept. 1983 to March 1984
GSX, Reidsville, NC 27320

Manage and direct all facets of emergency response actions for the three GSX regional facilities covering the eastern two-thirds of the nation. Responsibilities include budget and expense plan development; bid preparation including all facets of project pricing; profitable, timely, and safe completion of all projects; contract negotiations; project press relations; development and expansion of response capabilities; meeting projected monthly revenue of \$650,000.00; assuring coordination of field activities with administrative functions.

Manager; Systems & Development Group Jan. 1981 to Sept. 1983
GSX, Laurel and Reidsville, NC 27320

Responsible for research and development of business programs, services, products, and capabilities; management of daily vendor and subcontractor operations; management and direction of systems coordination for all GSX emergency and remedial response actions and special projects, including detonations. Provide company

technical guidance, and develop waste handling/disposal procedures. Monitor market trends and concepts and direct company response to the same.

Manager; Administrative Services
GSX, P. O. Box 370, Laurel, MD 20707

July 1980 to January 1981

Responsible for the direction and coordination of Divisional Accounting Departments, Purchasing Department, Inventory Control, Retail Program Development, Public Relations, and paralegal services for Triangle Resource Industries.

Divisional Purchasing Officer
GSX, Laurel, MD 20707

March 1980 to July 1980

Responsible for purchasing all merchandise, raw commodities, equipment, supplies, and services necessary for operation and safety of the division, and inventory coordination.

Store Manager, Operations
W.R. Grace & Co., Inc., Retail Group.

Sept. 1977 to March 1980

Responsible for all store functions including merchandising, replenishment of stock, cash reconciliation and deposit, staff hiring and terminations, customer relations, training, EOE reporting and enforcement, union relations, and 1976 union negotiations, in addition to overall management of 65 employees.

Store Area Manager
W.R. Grace & Co., Inc., Retail Group

March 1977 to Sept. 1977

Responsible for over-all management of four sports-related departments. Managed areas of budgeting, sales projections, buying, merchandising, display work, and payroll scheduling.

Department Manager, High Adventure
W.R. Grace & Co., Inc., Retail Group

Oct. 1976 to March 1977

Responsible for the sale and merchandising of outdoor sports equipment. Responsible for payroll planning, basic retail training, product seminars, and maintaining skilled sales staff.

Instructor, Mountaineer and
Climbing Course Rocks Inc.

Oct. 1972 to April 1976
(part-time and full-time)

Instructed advanced mountaineering and rock climbing.

Ranger Technician
Special Park Services, U.S. Dept. of the Interior, National Park Service

Feb. 1975 to Oct. 1975

Responsible for first aid and emergency rescue operations (River Rescue Team and Rock Rescue Team) for the U.S. National Park Service. Other responsibilities included accident investigation, general patrol, and park mis-use prevention.

MILITARY SERVICE, U.S. MARINE CORPS, Honorable Discharge

GSX SPECIAL PROJECTS:

- * GSX Project Director for the Florida Amnesty Days Program
- * Project Director for all GSX Emergency Response Actions
- * Project Director for all ERCS contract jobs

Specific projects have included the following:

- * Project Director for the clean-up of an extraction facility
- * Project Director and Manager for the stabilization of a 35 acre EPA Superfund Site in North Carolina. Major remedial actions included the removal and disposal of over 2,000 drums and one large wastepile, drainage and excavation of 13 surface lagoons, removal and disposal of 9 surface and 2 subsurface tanks, decontamination of facility buildings.
- * Project Director for the decontaminization of 2 PCB contaminated 5,000 gal. and 1,000 gal. tankers in Tennessee, and the removal and disposal of all associated PCB wastes.
- * Project Director for the removal of 350 drums of waste solid and liquid adhesives, glycols, TDI, etc.
- * Project Director for the PCB decontamination of a North Carolina switching station and its partial demolition.
- * Project Director for the U.S. EPA emergency response action to the Hampton, VA gas cylinder crises.
- * Project Manager in the emergency removal of two 20,000 gal tanks of flammable solids and sludge, one hopper feeder system, one 500 gal tank, and one tanker.
- * Project Manager of a Superfund Immediate Removal Action Project. Involved the three day removal/disposal of 250 drums of flammable liquids/solids and contaminated soil.
- * Project Manager for detonation jobs resulting in the thermal treatment of over 3,500 lb of various chemical compounds during the past year in three US EPA regions.
- * Coordinating consultant on two North Carolina River oil spills contaminating river water, banks, and causing fish kill
- * Project Manager for the 6 month clean-up of a major Superfund site in Columbia, SC. Site materials included explosive, shock sensitive, toxic, flammable, and reactive materials and severely deteriorated gas cylinders. Gas cylinders, shock sensitive, and explosive materials were disposed of by detonation.
- * Project Director for a Superfund Immediate Removal Action of 4500 cylinders of inert and toxic gases
- * Project Manager in the PCB decontamination of a major soft drink manufacturer bottling plant. Project included the monitoring of client personnel for PCB exposure.

WORKSHOPS AND TRAINING PROGRAMS:

July 1978 - Louis A. Allen Management Seminar
April 1979 - Leadership Program and Management Action
April 1979 - Performulations Workshop
June 1979 - Time Management Program, NVCC
May 1980 - Texas A & M, Oil Spill School
Feb. 1981 - TRI Performulations Workshop

- Feb. 1983 - DuPont's Professional Training Seminar "Blasting & Explosives Safety"
- Feb. 1983 - DuPont's Professional Training Seminar "Surface Blasting"

PUBLICATIONS:

- Aug. 1982 - Contributing Author, South Carolina's UPDATE magazine; "Up in Smoke" and "The Dark Side of Chemistry"
- Nov. 1982 - Author, Hazardous Waste Report, "Outlook '83"

MEMBERSHIPS:

Society of Explosives Engineers

SPEAKING ENGAGEMENTS:

- Oct. 1983 - Seminars in "Management of Hazardous Chemical and Low Level Radioactive Waste", Cleaning up a Superfund Site North Carolina State University, School of Engineering

RESUME

NAME: Jackie G. Smith

EDUCATION:

Civilian:

Haynesville High School, Haynesville, LA, Graduate 1972.

Northwestern State University Natchitoches, LA - B.S.
Microbiology 1976.

Military:

Ordnance Officer Basic Course 1977.

Special Ammunition (Nuclear) Officer Course 1977.

Ordnance Officer Advance Course 1981.

Explosive Ordnance Disposal Phase I (Chemical) 1982.

Explosive Ordnance Disposal Phase II (Conventional) 1982.

Explosive Ordnance Disposal Phase III (Nuclear) 1982.

EXPERIENCE:

Explosive Project Manager; Emergency, Remedial and Technical
Projects Group February 1, 1984 to Present
GSX Services, Inc., P.O. Box 210, Reidsville, NC 27320

Responsible for planning, directing, and coordinating all remedial and emergency response actions involving any and all shock sensitive, explosive, and exothermically reactive materials compounds. Responsible for the safe removal, transportation and treatment of same in the most efficient and safest manner to protect the environment and personnel from potential harm. Responsible for the training of other GSX personnel in the safe handling and usage of specially designed explosive equipment and materials.

Operations Officer; United States Army

Jan. 23, 1983 to Feb. 1, 1984
United States Army, 457th Ord. Det. (EODCC), Ft. Gillem, GA
30050

Responsible for the training and operational control of 1 SOCOM EOD and 10 CONUS based units for the Southeastern United States, Puerto Rico, Panama, and the U.S. Virgin Islands. Responsible for the planning and coordination of all range clearances within this area. Provided EOD support to United States Secret Service in support of the President, Vice President, various Heads of State, and other designated VIP's. Received and gave training on safe handling procedures for the newest conventional and other types of munitions.

Commander; United States Army

August 1981 to January 23, 1983
United States Army, 48th Ord. Det. (EOD), Ft. Jackson, SC 29207

Responsible for the supervision of all unit personnel and day to day operation of the unit. Work closely with military and civilian law enforcement agencies in the handling of explosive ordnance disposal incidents. These include military ordnance and explosives, chemical explosives, chemicals and nuclear materials. Presented and participated in training classes and seminars for federal, state, and local law enforcement agencies involving explosives and explosive devices. Provided EOD support to the United States Secret Service (USSS), in the protection of the President, Vice President, various Heads of State and other designated VIP's. Rendered safe several improvised explosive devices (IED's) in the civilian community and assisted various law enforcement agencies when bombings or bomb threats occurred.

Worked with GSX personnel during the destruction of shock sensitive explosive material during the Bluff Road Chemical Waste Site Cleanup in Columbia, SC. Destroyed shock sensitive chemicals at Mississippi State University, Columbus, Mississippi for GSX.

Student; Explosive Ordnance Disposal School

January 1981 to August 1981
United States Army, Indian Head, Maryland

Received detailed training on the destruction, neutralization, storage and transportation of toxic chemicals and explosives both commercial and military. Also served as Class Leader responsible for all officers, enlisted and civilian members in the class. Graduated from the course with an average of 96%.

Student; Ordnance Officer Advance Course

March 1980 to January 1981
United States Army, Redstone Arsenal, Alabama

Received detailed training on all aspects of conventional ordnance.

Executive Officer; United States Army

July 1977 to March 1980
United States Army, 9th Ordnance Company, Miesau Army Depot, FRG

Served as Executive Officer, Platoon Leader, Nuclear Maintenance Shop Officer, and Emergency Destruction Officer for a 170 man unit in NATO forces north of the Alps. Participated as responsible officer and courier officer for highly sensitive items in both ground and air convoys throughout Europe. Received extensive training in Nuclear Accident Incident Response and served as a member and officer in charge of a Nuclear Incident Accident Team (Alpha Team) for central Europe. Unit was exercised annually and received many letters of appreciation for the work performed. Served also as Maintenance Officer for highly sensitive ordnance items in the European Theater.

Student; Ordnance Officer Basic Course and Special Ammunition Course
July 1976 to July 1977
United States Army, Redstone Arsenal, Alabama

Entered Army July 30, 1976. Received training in storage, transportation and handling of military and commercial explosives and ammunition. Received detailed training in storage, transportation and hazards of nuclear material.

Student; Northwestern State University, Natchitoches, LA
August 1972 to July 1976

Carried a double major in Chemistry and Microbiology and a double minor in Biology and English. Received a Bachelor of Science in Microbiology. Assisted in and taught freshman chemistry classes.

Civilian Employment Prior to Entrance to Army

Various positions that included salesman, stock clerk, and field hand.

GSX SPECIAL PROJECTS:

- * Explosives Project Manager for 20 Thermodynamic Treatment^R operations conducted between Feb. 1984 and Jan. 1985, treating hundreds of pounds of exothermically reactive materials.
- * Instructor for numerous laboratory explosives recognition and training programs
- * Explosives Technician for the Amnesty Days Hazardous Waste Collection Program conducted by GSX for the State of Florida
- * Emergency Response Recovery Technician for a tanker spillage of highly corrosive acid
- * Emergency Response Recovery Technician for an overturned tractor trailer carrying nitrocellulose, located just out side of Richmond, VA
- * Field technician for the decontamination of an acid contaminated food grade holding tank
- * Explosives technician for the disposal of explosive, shock sensitive, and exothermically reactive wastes from the Bluff Road Project

PRESENTATIONS:

Instructor for GSX's class "Recognition of Explosive Chemicals in the Laboratory"

RESUME

NAME: James A. Balint

EDUCATION:

Indiana University of Pennsylvania
Major: Industrial Safety Management Degree: B.S. 1982
Minor: Business Management

Courses Relating to Major;
Industrial Safety Management
Industrial Safety Engineering I & II
Nature & Effects of Occupational Health Hazards
Control of Occupational Health Hazards
Evaluation of Safety Program Effectiveness
Industrial Safety Management Internship
Industrial Fire Protection
Accident Investigation
Air Pollution
Ergonomics

Other education: Multimedia Standard First Aid, American Red Cross

EXPERIENCE:

Health and Safety Officer April 1984 to present
GSX Services, Inc., P.O. Box 210, Reidsville, NC 27320

Provide technical assistance in industrial hygiene and safety, including regulatory requirements and recommended protective clothing and safety procedures. Perform air sampling, analytical evaluation, and facility safety inspections. Present employee safety programs and updates. Order and maintain company safety supplies. Participate as an on-site safety officer for emergency response and remedial action projects, decontamination jobs, etc.

Safety Officer Feb. 1984 to April 1984
Schneider Power Corp., Beaver Valley Nuclear Power Plant Unit II, Shippingport, PA

Air monitored confined spaces for oxygen content, combustible gases, and carbon monoxide. Investigated accidents; conducted weekly safety tours; and identified field hazards and implemented corrective actions.

Safety Officer July 1983 to Nov. 1983
Spencer, White, and Prentis, Consumers Power (Nuclear Power Plant), Midland MI

Conducted safety training and confined space air monitoring for oxygen content, combustible gases, and carbon monoxide. Fulfilled OSHA recordkeeping requirements. Responsible for all aspects of on-the-job safety.

Internships

1979 to 1982

Participated in seven internship programs for various colleges, and manufacturing and construction companies. Activities included sprinkler system assessment; combustible storage assessment; fork truck traffic pattern evaluation; work area inspections; health and safety program assessment; laboratory hood ventilation survey; fire program and electrical hazards assessment; flammable storage assessment; power plant air sampling; and noise survey.

GSX SPECIAL PROJECTS:

- * H & S Officer for numerous decontamination and confined space projects
- * H & S Officer for the Amnesty Days Hazardous Waste Collection Program conducted by GSX for the State of Florida
- * H & S Officer for clean-up of an extraction facility
- * Technician for the Thermodynamic Treatment of explosive, shock sensitive, and exothermically reactive chemicals

MEMBERSHIPS:

American Society of Safety Engineers

GSX SERVICES, INC.

SECTION 3.5

REFERENCES

We have provided below a list of references for whom GSX has provided labpack service, both on the centralized collection station concept and for individual client pickups of waste laboratory chemicals, as well as contacts for whom GSX has provided emergency and remedial response services. Please feel free to contact these references for they can provide you with the best insight into GSX capabilities, professionalism, and project dedication.

Timothy W. Cotman, Sr.
Supervisor of Science
Virginia Dept. of Education
Box 6Q
Richmond, VA 23216
804-225-2652
(Virginia School Cleanout)

Mike Ferris
Medical University of SC
Physical Plant, Safety
Department
171 Ashley Avenue
Charleston, SC 29425
803-792-3604

Tom Stevens
FDER
Chemistry Lab
2100 Blairstone Rd.
Tallahassee, FL 32301
904-487-2571

Joseph Warner
Safety Director
University of South Florida
Adm. 273
Tampa, FLA 33620
813-974-2409

Naomi Martin
Secondary Math & Science Coordinator for
Horry County School District
P.O. Box 1739
Conway, SC 29526
803-248-2206 ext. 273

Frank Walper
Florida Department of
Environmental Regulation
2600 Blairstone Road
Tallahassee, FL 32301
904-488-9831

Rosemary Fairman
Mgr., R & D
GAF Corp.
1361 Alps Road
Wayne, NJ 07470
201-628-3373

Ken Christian
ICI America
Newcastle, DE
302-575-4618

Steve Samet, Plant Mgr.
Elkins-Sinn, Inc.
Subsidiary of H.A. Robins
#2 Esterbrook Lane
Cherry Hill, NH 08034

George Eager
Princeton University
Princeton, NJ
609-452-5732

Nicholas Davich
Environ. Engineer
Gulf Research & Devt
P.O. Drawer 2038
Pittsburgh, PA
412-665-2837

Robert Malpass*
Department of Health &
Environmental Control
Bureau of Solid & Hazardous
Waste Management
2600 Bull St.
Columbia, SC 29201
803-758-5681

Tom Karnowski*
North Carolina Dept. of Human Resources
Div. of Solid & Hazardous Waste Management
306 Wilmington St.
Raleigh, NC 27602
919-733-2178

Wendy Grossman
Rutgers, The State University
Radiation & Environmental Health & Safety
Kilmer Building 4127
Piscataway, NJ 08854
201-932-2550

* Emergency and remedial activities

SECTION 3.6
LETTERS OF COMMENDATION



COMMONWEALTH of VIRGINIA

Department of General Services

DIVISION OF
CONSOLIDATED LABORATORY SERVICES

1 NORTH 14TH STREET
RICHMOND, VIRGINIA 23219

April 21, 1983

R. Michael McClung
Triangle Resource Industries
P.O. Box 210
Reidsville, North Carolina 27320

Dear Mr. McClung:

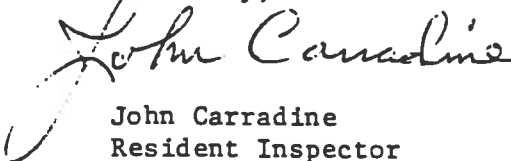
This is to express our appreciation for the manner in which the perchloric acid decontamination and duct system removal in the Consolidated Laboratory Building was performed.

Your initial visit to the site and your proposed method of decontamination left us confident that you had the knowledge and ability to carry out the project. We felt that you were fully aware of potential hazards and would exercise necessary safety precautions. This confidence was substantiated as you proceeded with the operation.

The work was completed in seven work days well ahead of the projected 20, with full cooperation with the requirement that the work be done off-hours when the building was unoccupied. There was a minimum of disruption to laboratory operations. The ductwork was removed and disposed of properly. Care was exercised to prevent damage, and we have found none.

We thank you and TRI for a job well done. We would not hesitate to recommend you to others for this type of work.

Sincerely,


John Carradine
Resident Inspector


Morton H. Lancaster
Owner Representative

bw

cc: Klaus Worrell

THE LOUISIANA STATE UNIVERSITY
AND AGRICULTURAL AND MECHANICAL COLLEGE SYSTEM

P.O. BOX 17350-A

BATON ROUGE . LOUISIANA . 70893-7350

OFFICE OF VICE PRESIDENT
FOR ADMINISTRATION
INSURANCE AND SAFETY

(504) 388-6956

June 10, 1983

Mr. Jim Knolls
Triangle Resource Industries
P. O. Box 210
Reidsville, North Carolina 27320

Dear Jim:

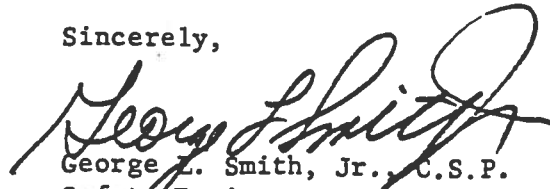
I would like to take this opportunity to express my sincere appreciation for the excellent job you, Mr. R. Micheal McClung, and Mr. Dan Benson did on the removal of our explosive material located on the 6th floor at the LSU Medical School, and subsequent detonation of same to LSU Fireman's Training Center.

The people involved have commented, which I am in total agreement, that this was one of the most professional jobs that we have ever witnessed.

My compliments to you and your staff. Feel free to use my name as a reference.

Again, thank you very much for a job well done.

Sincerely,



George L. Smith, Jr., C.S.P.
Safety Engineer
LSU System

cc: Mr. Leroy N. Howard
Vice President



City of Roanoke, Virginia

OFFICE OF EMERGENCY SERVICES
ROOM 154 MUNICIPAL BUILDING
ROANOKE, VIRGINIA 24011

April 6, 1984

Triangle Resource Industries
Attn: Jim Noles
Regional Service Center Manager
P. O. Box 210
Watlington Industrial Road
Reidsville, North Carolina 27320

Dear Jim:

On behalf of the City of Roanoke and the Office of Emergency Services, I would like to take this opportunity to thank you and your fine staff for your assistance in our "Chemical Clean-Up" Project.

The professionalism and expertise of Triangle Resource Industries certainly has been acknowledged by the City of Roanoke and all those who have come in contact with you and your staff during this project.

Again, thank you and be assured that we look forward to working with your fine organization again as the need arises.

Sincerely,

A handwritten signature in dark ink, appearing to read "Warren E. Trent", is written over the typed name.

Warren E. Trent
Coordinator

SECTION 3.7

CERTIFICATIONS AND LICENSES



DEPARTMENT OF THE TREASURY — BUREAU OF ALCOHOL, TOBACCO AND FIREARMS

LICENSE/PERMIT (18 U.S.C. CHAPTER 40, EXPLOSIVES)

In accordance with the provisions of Title XI, Organized Crime Control Act of 1970, and the regulations issued thereunder (27 CFR Part 55), you may engage in the activity specified in this license/permit within the limitations of Chapter 40, Title 18, United States Code and the regulations issued thereunder, until the expiration date shown. See "WARNING" and "NOTICE" on back.

DIRECT ATF CORRESPONDENCE TO	REGIONAL DIRECTOR (COMPLIANCE)	LICENSE/ PERMIT NUMBER
	BATF, P.O. BOX 2994 ATLANTA, GEORGIA 30370	1-NC-079-33-G6-90651
		EXPIRATION DATE
		JULY 1, 1986
NAME	GSX SERVICES, INCORPORATED	
TYPE OF LICENSE OR PERMIT	33 -- USER OF HIGH EXPLOSIVES	
REGIONAL DIRECTOR (COMPLIANCE)	BY	
		<i>Robert E. Dougherty</i>
PURCHASING CERTIFICATION		LICENSEE OR PERMITTEE
I certify that this is a true copy of a license/permit issued to me to engage in the activity specified.		
(SIGNATURE OF LICENSEE/PERMITTEE)		GSX SERVICES, INCORPORATED WATLINGTON INDUSTRIAL ROAD REIDSVILLE, NC 27320
The licensee/permittee named herein shall use a reproduction of this license/permit to assist a transferor of explosives to verify the identity and status of the licensee/permittee as provided in 27 CFR Part 55. The signature on each reproduction must be an ORIGINAL signature.		
ATF F 5400.14/5400.15, Part 1 (9-84) REPLACES ATF Forms 4706 and 4708, PART I, WHICH ARE OBSOLETE		

Certificate of Achievement

This certifies that

JAMES V. NOLES

*has successfully completed
Du Pont's course*

Blasting & Explosives Safety

2.0 Continuing Education Units


Manager of Seminars

FEBRUARY 16-18, 1983
(date)

Professional Training Seminars



Applied Technology Division

Certificate of Achievement

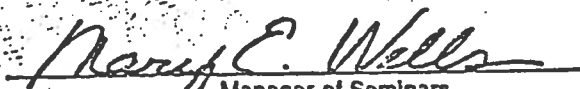
This certifies that

JAMES V. NOLES

*has successfully completed
Du Pont's course*

Surface Blasting

2.0 Continuing Education Units


Manager of Seminars

FEBRUARY 23-25, 1983
(date)

Professional Training Seminars



Applied Technology Division

Certificate
of
Achievement

This certifies that

R. MICHAEL MCCLUNG

*has successfully completed
Du Pont's course*

Blasting &
Explosives Safety

2.0 Continuing Education Units

Nancy E. Wells
Manager of Seminars

FEBRUARY 16-18, 1983
(date)

Professional Training Seminars



Applied Technology Division

Certificate
of
Achievement

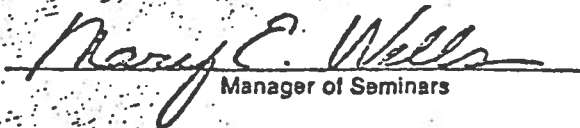
This certifies that

R. M. MCCLUNG

*has successfully completed
Du Pont's course*

Surface Blasting

2.0 Continuing Education Units


Manager of Seminars

FEBRUARY 23-25, 1983
(date)

Professional Training Seminars



Applied Technology Division

This Certifies That
James V. Noles

is a member in good standing of the
SOCIETY OF EXPLOSIVES ENGINEERS
and is entitled to all privileges of
such membership for the year



1985

Calvin J. Konya

Member No. #83-252 M Executive Director

This Certifies That
Ronald M. McClung

is a member in good standing of the
SOCIETY OF EXPLOSIVES ENGINEERS
and is entitled to all privileges of
such membership for the year



1985

Calvin J. Konya

Member No. #83-249 M Executive Director

Naval School Explosive Ordnance Disposal



This certifies that

Captain Jackie G. Smith, 439-96-1543, USA

**having successfully completed
the prescribed course of study for**

**BASIC EXPLOSIVE ORDNANCE DISPOSAL -
SURFACE/NUCLEAR PHASES**

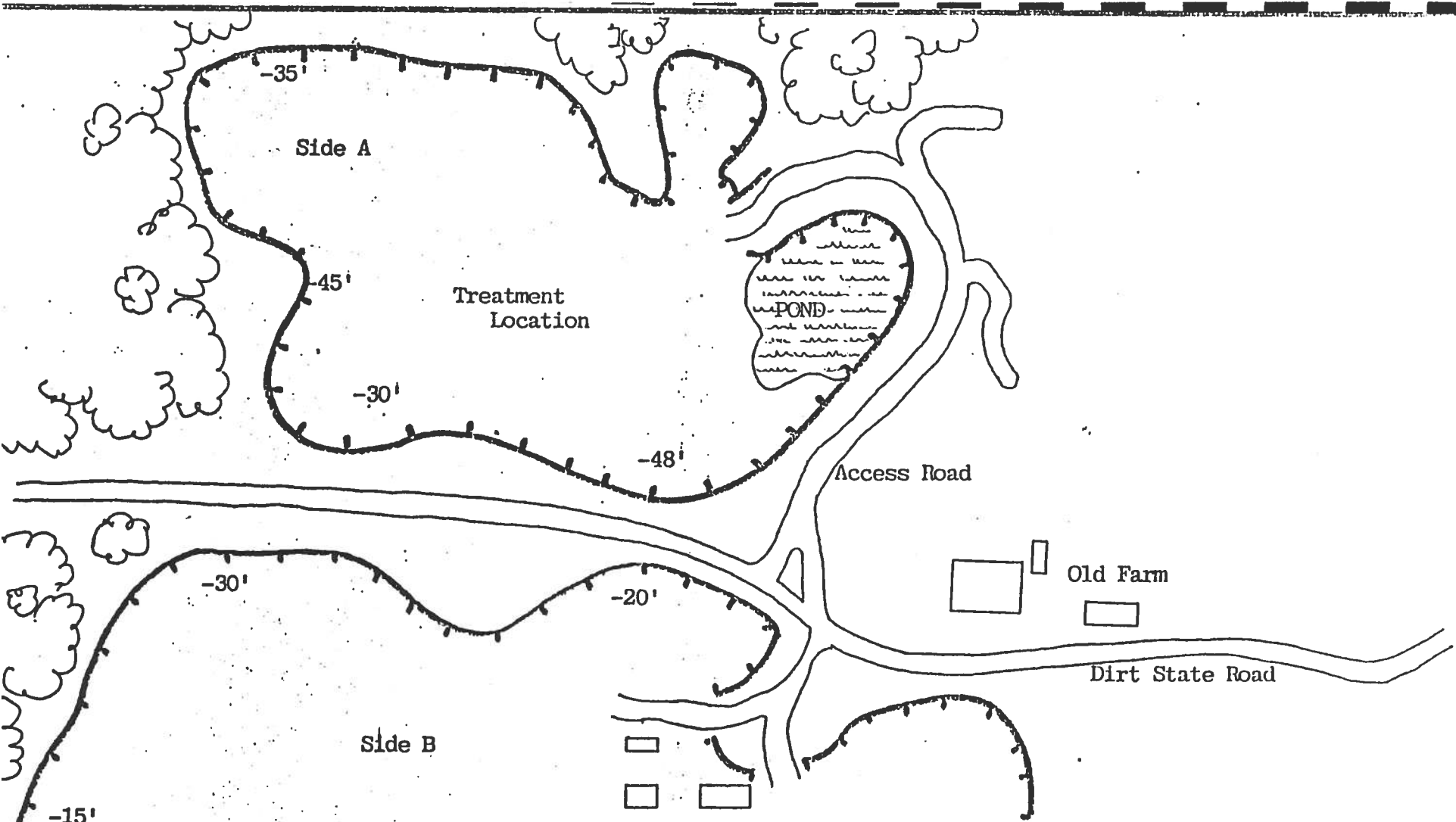
**is awarded this
Certificate**

this 15th **day of**

July A.D. 1981

JAMES C. BLANTON, CDR, USN
COMMANDING OFFICER

SECTION 4.0



MDC

Treatment Project

SCALE: nts

APPROVED BY:

JV Noles

DRAWN BY jcl

DATE: 6-85

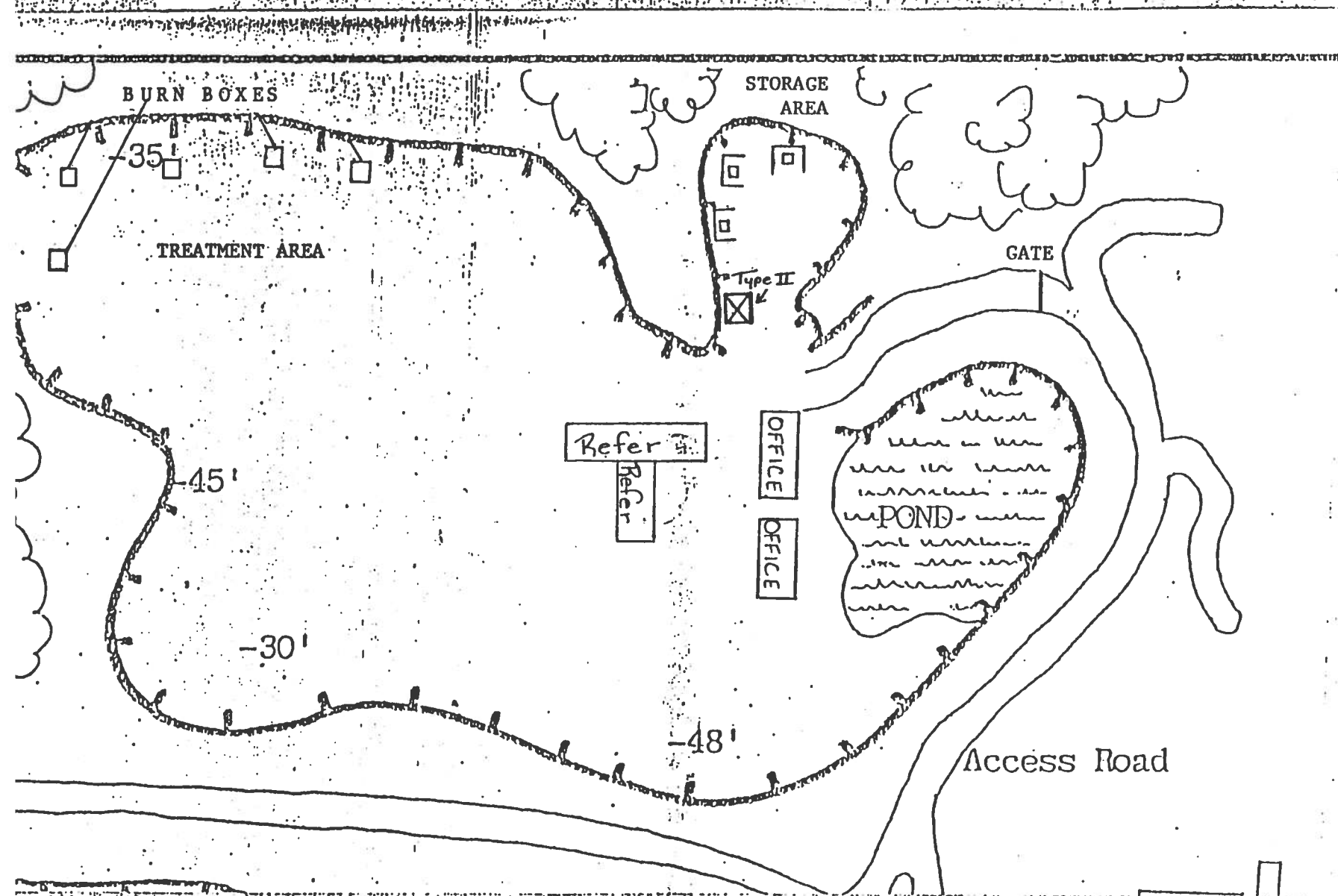
REVISED RMM

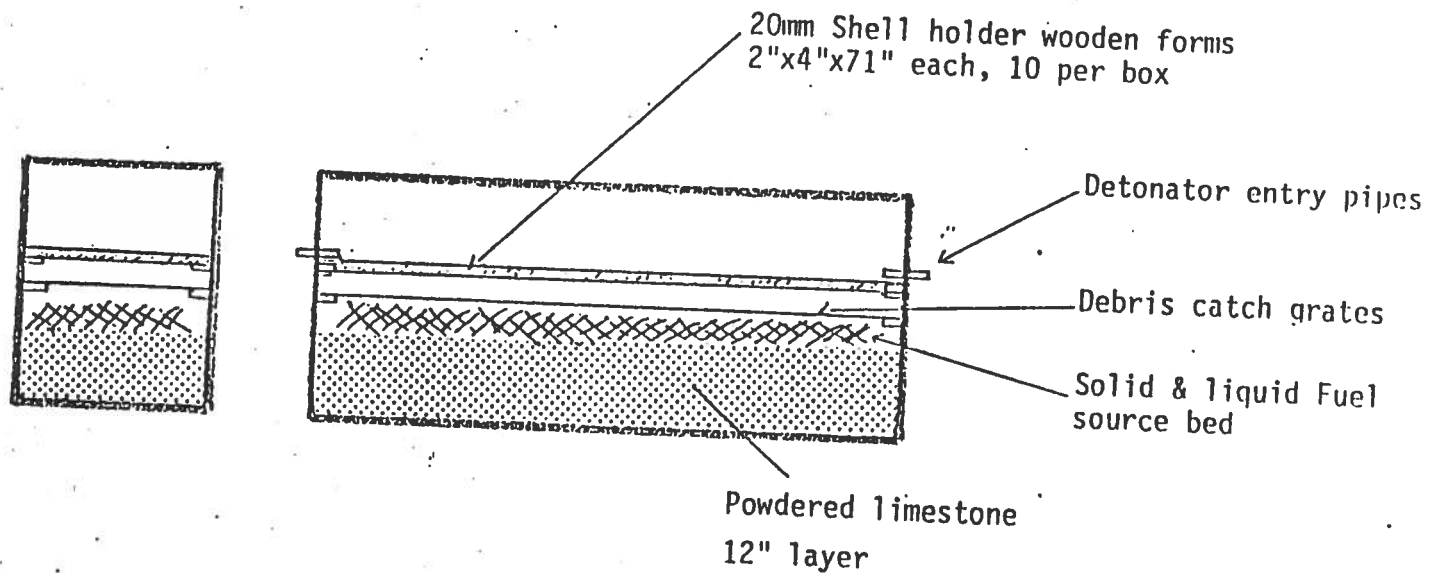
Triangle Resource Industries, an SCA Chemical Services Company

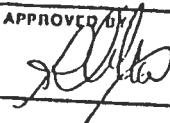
Treatment site layout

DRAWING NUMBER

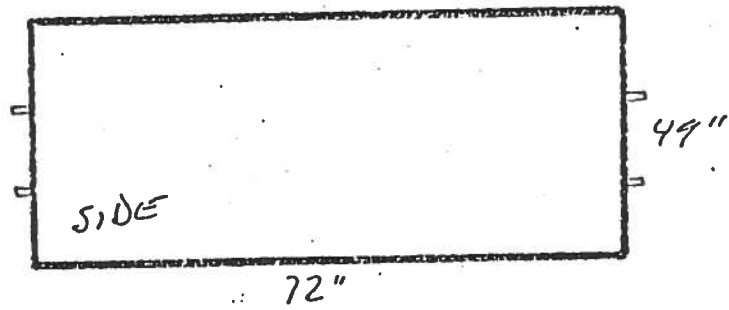
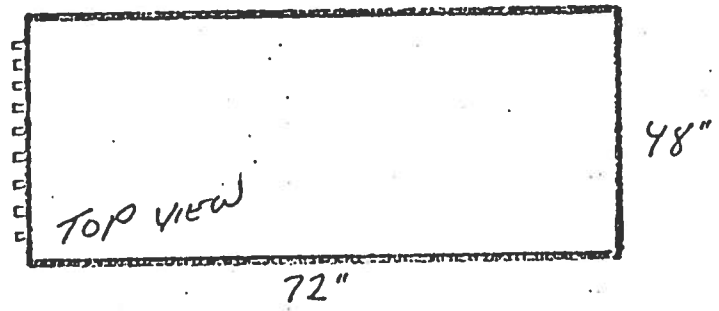
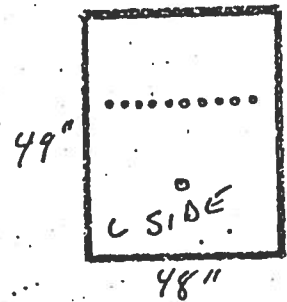
Drawing 01





MDC		primed ammo TREATMENT PROJECT	
SCALE: nts	APPROVED BY 		DRAWN BY rg
DATE: 6-85			REVISED RHM
TRIANGLE RESOURCE INDUSTRIES, an SCA Chemical Services Company			
TRI BURN BOX			

do not hinge
paint - blue

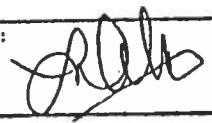


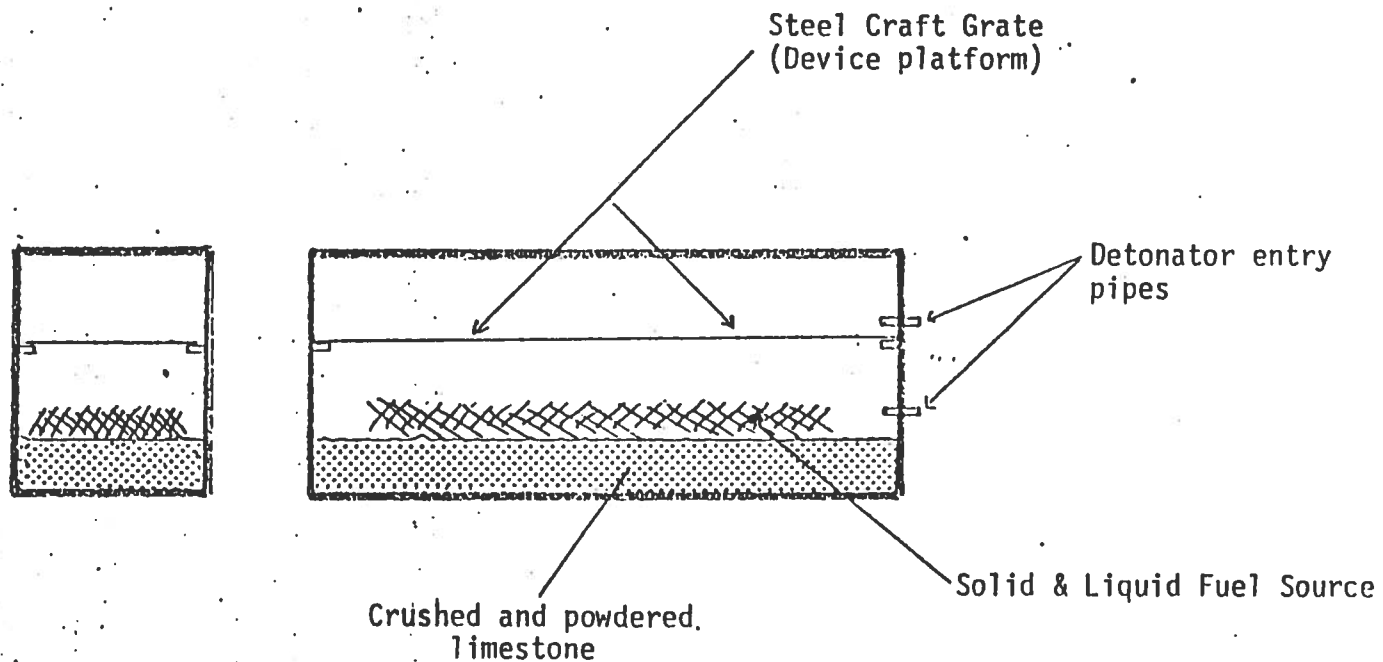
1/8" Rolled Steel
Burn Box
CAD work

..... Prototype 5.....

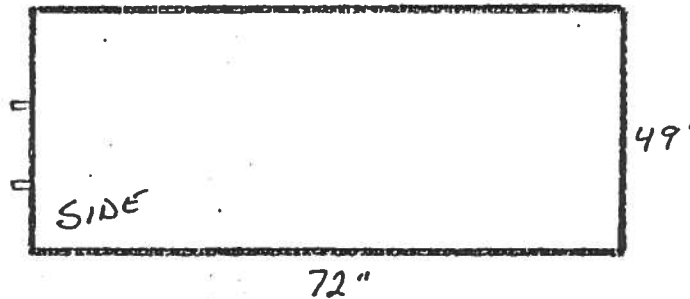
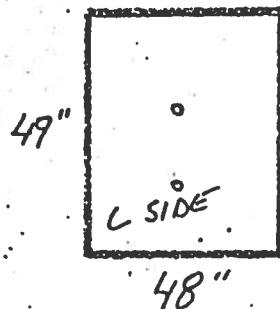
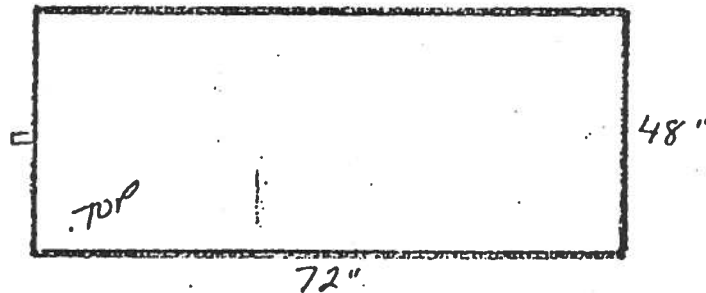
SYSTEMS & DEVELOPMENT GROUP
Sept. 04 1983

DRAFT
S & D REVIEW
OK

MDC TREATMENT PROJECT		
SCALE: NPS	APPROVED BY: 	DRAWN BY JD
DATE: 6-85		REVISED
BURN BOX primed projectile ammo		DRAWING NUMBER Drawing 03 - B



MDC		CAD Treatment Project/ RCRA reactive waste	
SCALE: nts	APPROVED BY: <i>[Signature]</i>	DRAWN BY: rg	
DATE: 6-85		REVISED: RMM	
TRIANGLE RESOURCE INDUSTRIES, an SCA Chemical Services Company			
TRI BURN BOX		prototype 4	DRAWING NUMBER Drawing 00- 036



.....Prototype 4.....

*1/8" Rolled steel boxes
Ena. Paint*

SYSTEMS & DEVELOPMENT GROUP
Sept. 04 1983

DRAFT
& D REVIEW
O.K.

MDC TREATMENT PROJECT		
SCALE: <i>MTS</i>	APPROVED BY: <i>[Signature]</i>	DRAWN BY: <i>JD</i>
DATE: 6-85		REVISED
BURN BOX for CAD explosives		DRAWING NUMBER: <i>1</i> Drawing 02 -- 03

SECTION 5.0

ANNEX I

ROUTE FROM MDC TO TREATMENT SITE

*PROVIDED BY MDC

TRUCK ROUTE PLAN

FOR TRANSPORTING REACTIVE WASTE (EXPLOSIVES) FROM MDC (BLDG 16) ST. LOUIS, MO TO BIGSPRING QUARRY, BIGSPRING, MO (BIGSPRING QUARRY LOCATED APPROXIMATELY 12 MILES NORTH OF HERMANN,MO).

1. GSX Services, Inc. transportation vehicles leave MDC Bldg. 16 and makes left turn on Banshee Road.
2. Proceed on Banshee Road to Lindbergh Blvd.
3. Make right turn onto Lindbergh Blvd.
4. Proceed North on Lindbergh Blvd. to McDonnell Blvd.
5. Make left turn onto McDonnell Blvd.
6. Proceed West on McDonnell Blvd to I-270 South.
7. Proceed South on I-270 to I-70 West (Kansas City, MO exit).
8. Proceed West on I-70 to Mo Highway 19 (approximately 54 miles).
9. Exit to Mo Highway 19 and turn left onto Highway 19.
10. Proceed South on Highway 19 to Mo County Highway J (approximately 7 miles).
11. Make right turn onto County Highway J.
12. Proceed West on Highway J (approximately 2 miles) to gravel road which exits from the right of Highway J. Entrance to gravel road will have a sign with "Bigspring Quarry" displayed on it.
13. Make right turn onto gravel road.
14. Proceed North on gravel road (approximately 1 mile) to Bigspring Quarry.

NOTE:

Documentation provided to drivers of transportation vehicles prior to shipment of the Reactive Waste in order to comply with the applicable regulatory requirements (CFR 40/49 and DOD) are as follows:

- (1) TRUCK ROUTE PLAN
- (2) MOTOR VEHICLE INSPECTION - DD FORM 626 (copy attached)
- (3) SPECIAL INSTRUCTIONS FOR MOTOR VEHICLE Drivers - DD FORM 836 (copy attached).
- (4) DEPARTMENT OF TRANSPORTATION DRIVING AND PARKING REGULATIONS FOR MOTOR CARRIERS (copy attached).
- (5) DEPARTMENT OF TRANSPORTATION - SHIPPING PAPERS - HAZARDOUS WASTE MANIFEST (copy attached).

MOTOR VEHICLE INSPECTION
(TRANSPORTING HAZARDOUS MATERIAL)

GBL. NO.	ORIGIN	DESTINATION
NAME OF CARRIER		
NAME OF DRIVER		
DATE AND HOUR		
INSTALLATION/ACTIVITY		
DRIVER'S STATE PERMIT NO.		
MEDICAL EXAMINER'S CERTIFICATE AND DATE		

VEHICLE

TYPE OF VEHICLE <input type="checkbox"/> TRUCK <input type="checkbox"/> TRUCK AND FULL TRAILER <input type="checkbox"/> TRACTOR AND DOUBLE TRAILERS <input type="checkbox"/> TRACTOR AND CLOSED SEMI-TRAILER <input type="checkbox"/> TRACTOR AND FLAT-BED TRAILER	TRUCK NUMBER	TRAILER(S) NUMBER	SLEEPER CAB
	ORIGIN	ORIGIN	<input type="checkbox"/> YES <input type="checkbox"/> NO
	DESTINATION	DESTINATION	VALID LEASE
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			I.C.C. NUMBER

NOTE: All of the following items shall be checked on empty equipment prior to loading.
Items with an asterisk(*) shall be checked on incoming loaded equipment.

ITEM NO.	CHECK APPROPRIATE COLUMN (See reverse side for explanatory notes)	ORIGIN		DESTINATION		REMARKS (Explain unsatisfactory items; use reverse side if necessary)
		SAT	UNSAT	SAT	UNSAT	
1.	ENGINE, BODY, CAB AND CHASSIS CLEAN					
2.	STEERING MECHANISM					
3.	HORN OPERATIVE					
4.	WINDSHIELD AND WIPERS					
5.	SPARE ELECTRIC FUSES AVAILABLE					
6.	REAR VIEW MIRRORS INSTALLED					
7.	HIGHWAY WARNING EQUIPMENT					
* 8.	FULL FIRE EXTINGUISHER INSTALLED					
9.	LIGHTS AND REFLECTORS OPERATIVE					
10.	EXHAUST SYSTEM					
* 11.	LIQUID PETROLEUM GAS POWERED VEHICLES					
* 12.	FUEL TANK, LINE AND INLET					
13.	COUPLING DEVICES - KINGPIN LOCK					
* 14.	ALL BRAKES OPERATIVE					
* 15.	LANDING GEAR ASSEMBLY OPERATIVE					
16.	SPRINGS AND ASSOCIATED PARTS					
* 17.	TIRES					
18.	CARGO SPACE					
* 19.	ELECTRIC WIRING					
* 20.	TAIL GATE AND DOORS SECURED					
* 21.	FIRE AND WATER RESISTANT TARPULIN					
22.	ANY OTHER DEFECTS (Specify)					

☐ APPROVED (If rejected give reasons on reverse under "Remarks". Equipment shall be approved if deficiencies are corrected prior to loading.)
☐ REJECTED

SIGNATURE (of Inspector)
ORIGIN

SIGNATURE (of Inspector)
DESTINATION

ITEMS TO BE CHECKED PRIOR TO RELEASE OF LOADED VEHICLE		ORIGIN	DESTINATION
23.	MIXTURES OF MATERIAL PROHIBITED BY DOT REGS. ARE NOT LOADED ONTO THIS VEHICLE		
* 24.	LOAD IS SECURED TO PREVENT MOVEMENT		
25.	WEIGHT IS PROPERLY DISTRIBUTED AND VEHICLE IS NOT OVERWEIGHT		
* 26.	SEAL(S) APPLIED TO CLOSED VEHICLE, FIRE AND WATER RESISTANT TARPULIN APPLIED ON OPEN VEHICLE		
* 27.	SPECIAL INSTRUCTIONS (DD Form 836) FURNISHED DRIVER		
* 28.	COPY OF VEHICLE INSPECTION (DD Form 626) FURNISHED DRIVER		
* 29.	PROPER PLACARDS APPLIED		
* 30.	SHIPMENT MADE UNDER DOT EXCEPTION 668		

SIGNATURE (of Inspector) ORIGIN

SIGNATURE (of Driver) ORIGIN

SIGNATURE (of Inspector) DESTINATION

SIGNATURE (of Driver) DESTINATION

EXPLANATORY NOTES

REFERENCES IN ITALICS BELOW ARE THE APPLICABLE PORTIONS OF THE DOT MOTOR CARRIER SAFETY REGULATIONS (M.C.S.R.) AND THE CODE OF FEDERAL REGULATIONS (C.F.R.); DOD REQUIREMENTS ARE ESTABLISHED BY THE DEPARTMENT OF DEFENSE (DOD)

THE INSPECTOR MUST BE FAMILIAR WITH THE CITED PORTIONS OF THE SAFETY AND EXPLOSIVE REGULATIONS

MEDICAL EXAMINER'S CERTIFICATE — Certificate must not be over 24 months old. (M.C.S.R.)

Item 1, ENGINE, BODY, CAB, AND CHASSIS CLEAN (e.g., no excessive oil or grease) — Inspect to see that engine and compartment are clean, check cab to see that no excessive grease is on cab and cab floor is free of debris; check under cab and chassis for excessive grease. (DOD Requirement)

Item 2, STEERING MECHANISM — Inspect to see that steering mechanism is in good condition, in proper adjustment, correctly and securely mounted, and whether the steering gear case is leaking lubricant. Pay particular attention to the pitman arm and tie rod assembly to see that they are securely mounted and not bent out of normal shape. (DOD Requirement)

Item 3, HORN OPERATIVE — Inspect to see that horn is securely mounted and of sufficient volume to serve its purpose. (M.C.S.R.)

Item 4, WINDSHIELD AND WIPERS — Inspect to see that the windshields of the tractors are free from breaks, cracks or defects which would make operation of the vehicle unsafe, that the view of the driver is not obscured by stickers, that wipers operate properly, and that wiper blades are of proper kind and in good condition. Defroster operative when conditions require it. (M.C.S.R.)

Item 5, SPARE ELECTRIC FUSES AVAILABLE — Check to see that at least one spare fuse for each kind and type of installed fuse is carried on vehicle as a spare, or it is equipped with an overload protective device (circuit breaker) (M.C.S.R.)

Item 6, REAR VIEW MIRRORS INSTALLED — Every truck and truck tractor shall have installed two rear vision mirrors, one at each side, firmly attached and so located as to reflect to the driver a view of the highway to the rear along both sides of the vehicle. Mirrors must not be cracked or dirty. (M.C.S.R.)

Item 7, HIGHWAY WARNING EQUIPMENT — This equipment must include either three red electric lanterns in operating condition and two red flags or three red emergency reflectors and two red flags with standards adequate to maintain them in an upright position, or three red emergency reflective triangles or three bidirectional emergency reflective triangles. Flame producing equipment is prohibited. (M.C.S.R.)

Item 8, FULL FIRE EXTINGUISHER INSTALLED — Inspect to see that one full fire extinguisher having an Underwriters' Laboratories rating of 10 B:C or more is securely mounted and readily accessible. (M.C.S.R.)

Item 9, LIGHTS AND REFLECTORS OPERATIVE — (Head-Stop-Tail-Front and Rear Clearance) — Inspect all lights and switches, including clearance lights and turn signals; make sure they are not obscured by dirt or grease or have broken lens; high and low beam switch must be operative. **EMERGENCY flashers** operating on front and rear of vehicle. (M.C.S.R.)

Item 10, EXHAUST SYSTEM — Inspect the exhaust system to see that no part is so located as would be likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the vehicle. The exhaust system shall discharge to the atmosphere at a location to the rear of the cab or, if the exhaust projects above the cab, at a location near the rear of the cab. (M.C.S.R.)

Item 11, LIQUID PETROLEUM GAS POWERED VEHICLES — Inspect LPG burning system to insure compliance with DOT standards prescribed in 49 CFR 393.69. (M.C.S.R.)

Item 12, FUEL TANK, LINE, AND INLET — Inspect tanks and fuel lines to see that they are in completely serviceable condition, free from leaks or evidence of leakage and securely mounted. Examine caps for defective gaskets or plugged vents. Inspect the filler necks to see that they are in completely serviceable condition, securely supported and not leaking at joints. (M.C.S.R.)

Item 13, COUPLING DEVICES - KINGPIN LOCK — Inspect without uncoupling to see that the fifth wheel rocker plate and bed are in good condition, properly assembled and mounted, and adequately lubricated. Kingpin lock must operate freely and properly, lock securely, and not show excessive wear. (M.C.S.R.)

Item 14, ALL BRAKES OPERATIVE — (Including hand brakes and air pressure warning devices) — Inspect for all or grease leaks around drum flanges, pedal travel, air or vacuum line leaks, moisture in tanks, compressor build up and governor cut off. Test for proper and adequate brake application. (M.C.S.R.)

Item 15, LANDING GEAR ASSEMBLY OPERATIVE — Landing gear assembly must be in good condition, correctly assembled, adequately lubricated, and properly mounted.

Item 16, SPRINGS AND ASSOCIATED PARTS — Examine visually the springs, suspension hanger mechanisms, torsion bar assemblies, and auxiliary parts such as U-bolts, shackles, center bolts and hangers, for breakage, improper adjustment, and, as appropriate, lack of lubrication. Air suspensions should not be leaking. (DOD Requirement)

Item 17, TIRES — Examine all tires for cuts, bruises, breaks, and blisters. All tires with cuts or injuries extending into the cord body and those worn smooth in the center of the tread are not acceptable. Insure that stones are removed from between duals. Tires must be properly matched on dual-equipped tractors and trailers. (M.C.S.R.)

Item 18, CARGO SPACE — Inspect to see that cargo space is clean and in good condition to prevent damage to lading from exposed bolts, nuts, screws, nails, or other inwardly projecting parts. Check floor to make sure it is tight and free of holes. Floors shall not be permeated with oil or gasoline. (C.F.R.)

Item 19, ELECTRIC WIRING — Electric wiring must be clean and properly secured, insulation must not be frayed or otherwise in poor condition. There must be no uninsulated wires or improper splices or connections. Wires and electric fixtures inside the body must be protected from the lading. (M.C.S.R.)

Item 20, TAILGATE AND DOORS ON CLOSED EQUIPMENT SECURED — Inspect to see that all hinges are tight in body. Check for broken latches and safety chains. Doors must close securely. (M.C.S.R.)

Item 21, FIRE AND WATER RESISTANT TARPAULIN — If shipment is made on open equipment, check to make sure the lading is properly covered with a fire and water resistant tarpaulin. Explosive material packed in fire and water resistant containers and transported on flat-bed vehicles are not required to be covered with fire and water resistant tarpaulins. (C.F.R.)

Item 22, ANY OTHER DEFECTS (Specify) — Self Explanatory.
Item 23, MIXTURES OF MATERIAL PROHIBITED BY DOT REGS. ARE NOT LOADED ONTO THIS VEHICLE — Check carefully to prevent loading of incompatible explosives. (C.F.R.)

Item 24, LOAD IS SECURED TO PREVENT MOVEMENT — Self Explanatory.

Item 25, WEIGHT IS PROPERLY DISTRIBUTED AND VEHICLE IS NOT OVERLOADED — Lading shall be distributed in accordance with the approved load plan, when available, or when not available, a plan agreed upon by the shipper and the carrier. The weight of the load shall not exceed the capacity of the vehicle established by the carrier. The gross axle weights and the gross vehicle weight shall not exceed the limits imposed by the states through which the vehicle is routed. The carrier shall inform the shipper of the state(s) law requirements. (DOD Requirement)

Item 26, 27, and 28 — Self Explanatory.

Item 29, PROPER PLACARDS APPLIED — Four standard placards applicable to the load will be furnished the carrier and insure they are conspicuously displayed, one in front, rear, and each side. (C.F.R.)

Item 30, SHIPMENT MADE UNDER DOT EXCEPTION 868 — This item will be checked when a shipment is made under the provisions of DOT Exception 868. When checked, it signifies that the shipment was loaded in compliance with carrier's advice on maximum weight and that the driver is relieved from certifying to Items 23, 24, and 25. (DOD Requirement)

REMARKS

SPECIAL INSTRUCTIONS FOR MOTOR VEHICLE DRIVERS		DATE
TO: (Carrier's Name and Trailer Number)		FROM: (Installation Issuing Instructions)
BILL OF LADING NUMBER	THIS TRUCK IS LOADED WITH (Commodity description)	
TYPE PLACARDS REQUIRED		
IN CASE OF FIRE		IN CASE OF ACCIDENT
<p>1. If any part of the vehicle outside of actual contents catches fire, take vehicle to a clear or uninhabited area, if practicable, and/or attempt to put fire out immediately with hand extinguishers or other available means. If practicable, ask someone to notify the fire department. Call to the attention of fire or police personnel at the scene of the fire the information on this form.</p> <p>2. Fires may be fought until the flames reach the cargo, at which time firemen and other personnel should be withdrawn to a safe distance, as noted in 5 and 6 below.</p> <p>3. If in convoy, other trucks proceed to safe distance.</p> <p>4. Water may be used on this cargo <input type="checkbox"/> Yes <input type="checkbox"/> No (See Other Specific Precautions or Instructions below)</p> <p>5. Firemen should not approach closer than _____ feet* from the fire when the fire has reached the cargo. (See Other Specific Precautions or Instructions below)</p> <p>6. Public should not approach closer than _____ feet* from fire.</p> <p>7. As soon as practical, notify the nearest military installation.</p>		<p>1. Set brake and block vehicle to prevent movement.</p> <p>2. Post flags by day, and red electric lanterns or reflectors by night, warning traffic approaching from each direction.</p> <p>3. Call for ambulance, if necessary.</p> <p>4. Notify nearest police.</p> <p>5. Notify nearest military installation if cargo is damaged.</p>
		ADDITIONAL NOTIFICATION REQUIRED (By phone or wire as soon as possible)
		IN CASE OF BREAKDOWN
		<p>1. Do not attempt to tow loaded vehicle.</p> <p>2. Post flags by day and red electric lanterns by night, warning traffic from each direction.</p>
GENERAL PRECAUTIONS		
<p>1. While operating over public roads, keep at least 300 feet from trucks loaded with explosives or other dangerous articles; a greater minimum distance must be maintained if required by state or municipal regulations.</p> <p>2. Protect the public from the hazards of the cargo.</p> <p>3. Do not allow smoking or use of matches or lighters in or near the vehicle.</p> <p>4. Obey all state and local traffic regulations.</p> <p>5. Do not exceed posted speed limits.</p>		<p>6. Stop at all railroad crossings.</p> <p>7. Use designated routes. Whenever possible, avoid congested residential or business areas.</p> <p>8. Do not permit unauthorized persons to ride on vehicles.</p> <p>9. At other than carrier rest stops or interchange points, select safe parking space at stopping locations designated by the carrier. Vehicles carrying explosives should not group together at these stopping locations.</p>
OTHER SPECIFIC PRECAUTIONS OR INSTRUCTIONS		
These instructions must be transferred to each subsequent driver for turn-in at final destination. If more than 3 drivers are involved, the additional signatures should be made on an extra sheet and attached hereto.	SIGNATURE OF SHIPPER REPRESENTATIVE	SIGNATURE OF FIRST DRIVER
	SIGNATURE OF SECOND DRIVER	SIGNATURE OF THIRD DRIVER

* The distances shown are minimum; greater distances should be used whenever possible.

DEPARTMENT OF TRANSPORTATION DRIVING AND PARKING REGULATIONS FOR MOTOR CARRIERS

(49 CFR 397; 36 FR 4876, March 13, 1971; Amended by Code of Federal Regulations, Volume 49, Revised as of October 1, 1977; 46 FR 5318, January 19, 1981; 47 FR 47836, October 28, 1982; 49 FR 38290, September 28, 1984)

PART 397—TRANSPORTATION OF HAZARDOUS MATERIALS; DRIVING AND PARKING RULES

Sec.

- 397.1 Application of the rules in this part.
- 397.2 Compliance with Federal motor carrier safety regulations.
- 397.3 State and local laws, ordinances, and regulations.
- 397.5 Attendance and surveillance of motor vehicles.
- 397.7 Parking.
- 397.9 Routes.
- 397.11 Fires.
- 397.13 Smoking.
- 397.15 Fueling.
- 397.17 Tires.
- 397.19 Instructions and documents.
- 397.21 Marking of vehicles operated by private carriers.

AUTHORITY: 18 U.S.C. 834, sec. 204 of the Interstate Commerce Act, as amended (49 U.S.C. 304), sec. 6 of the Department of Transportation Act (49 U.S.C. 1655), and the delegation of authority by the Secretary of Transportation in 49 CFR 1.4(c).

SOURCE: 36 FR 4876, Mar. 13, 1971, unless otherwise noted.

NOMENCLATURE CHANGES: 39 FR 32561, Sept. 9, 1974.

§ 397.1 Application of the rules in this part.

(a) Except as provided in paragraph (c) of this section, the rules in this part apply to each motor carrier engaged in the transportation of hazardous materials by a motor vehicle which must be marked or placarded in accordance with § 177.823 of this title and to—

- (1) Each officer or employee of the carrier who performs supervisory duties related to the transportation of hazardous materials; and
- (2) Each person who operates or who is in charge of a motor vehicle containing hazardous materials.

(b) Each person designated in paragraph (a) of this section must know and obey the rules in this part.

(c) Intracity operations: The rules in this part do not apply to a driver or a vehicle wholly engaged in exempt intracity operations as defined in § 390.16, of this chapter.

§ 397.2 Compliance with Federal motor carrier safety regulations.

A motor carrier or other person to whom this part is applicable must comply with the rules in Part 390 through 397, inclusive, of this subchapter when he is transporting hazardous materials by a motor vehicle which must be marked or placarded in accordance with § 177.823 of this title.

§ 397.3 State and local laws, ordinances, and regulations.

Every motor vehicle containing hazardous materials must be driven and parked in compliance with the laws, ordinances, and regulations of the jurisdiction in which it is being operated, unless they are at variance with specific regulations of the Department of Transportation which are applicable to the operation of that vehicle and which impose a more stringent obligation or restraint.

§ 397.5 Attendance and surveillance of motor vehicles.

(a) Except as provided in paragraph (b) of this section, a motor vehicle which contains Class A or Class B explosives must be attended at all times by its driver or a qualified representative of the motor carrier that operates it.

(b) The rules in paragraph (a) of this section do not apply to a motor vehicle which contains Class A or Class B explosives if all of the following conditions exist—

(1) The vehicle is located on the property of a motor carrier, on the property of a shipper or consignee of the explosives, in a safe haven, or, in the case of a vehicle containing 50 pounds or less of either Class A or Class B explosives, on a construction or survey site; and

(2) The lawful bailee of the explosives is aware of the nature of the explosives the vehicle contains and has been instructed in the procedures he must follow in emergencies; and

(3) The vehicle is within the bailee's unobstructed field of view or is located in a safe haven.

(c) A motor vehicle which contains hazardous materials other than Class A or Class B explosives and which is located on a public street or highway or the shoulder of a public highway must be attended by its driver. However, the vehicle need not be attended while its driver is performing duties which are incident and necessary to his duties as the operator of the vehicle.

(d) For purposes of this section—

(1) A motor vehicle is attended when the person in charge of the vehicle is on the vehicle, awake, and not in a sleeper berth, or is within 100 feet of the vehicle and has it within his unobstructed field of view.

(2) A qualified representative of a motor carrier is a person who—

(i) Has been designated by the carrier to attend the vehicle;

(ii) Is aware of the nature of the hazardous materials contained in the vehicle he attends;

(iii) Has been instructed in the procedures he must follow in emergencies; and

(iv) Is authorized to move the vehicle and has the means and ability to do so.

(3) A safe haven is an area specifically approved in writing by local, State, or Federal governmental authorities for the parking of unattended vehicles containing Class A or Class B explosives.

(e) The rules in this section do not relieve a driver from any obligation imposed by law relating to the placing of warning devices when a motor vehicle is stopped on a public street or highway.

§ 397.7 Parking.

(a) A motor vehicle which contains Class A or Class B explosives must not be parked under any of the following circumstances—

(1) On or within 5 feet of the traveled portion of a public street or highway;

(2) On private property (including premises of a fueling or eating facility) without the knowledge and consent of the person who is in charge of the property and who is aware of the nature of the hazardous materials the vehicle contains; or

(3) Within 300 feet of a bridge, tunnel, dwelling, building, or place where people work, congregate, or assemble, except for brief periods when the necessities of operation require the vehicle to be parked and make it impracticable to park the vehicle in any other place.

(b) A motor vehicle which contains hazardous materials other than Class A or Class B explosives must not be parked on or within five feet of the traveled portion of public street or highway except for brief periods when the necessities of operation require the vehicle to be parked and make it impracticable to park the vehicle in any other place.

[49 FR 38290, September 28, 1984]

§ 397.9 Routes.

(a) Unless there is no practicable alternative, a motor vehicle which contains hazardous materials must be operated over routes which do not go through or near heavily populated areas, places where crowds are assembled, tunnels, narrow streets, or alleys. Operating convenience is not a basis for determining whether it is practicable to operate a motor vehicle in accordance with this paragraph. This paragraph does not apply to radioactive materials (See § 177.825 of this title).

[46 FR 5318, Jan. 19, 1981, effective Feb. 1, 1982]

(b) Before a motor carrier requires or permits a motor vehicle containing Class A or Class B explosives to be operated, he must prepare a written plan of a route that complies with the rules in paragraph (a) of this section for that vehicle and must furnish a copy of the written plan to the driver. How-

ever, the driver may prepare the written plan as agent for the motor carrier when the driver begins his trip at a location other than the carrier's terminal.

§ 397.11 Fires.

(a) A motor vehicle containing hazardous materials must not be operated near an open fire unless its driver has first taken precautions to ascertain that the vehicle can safely pass the fire without stopping.

(b) A motor vehicle containing hazardous materials must not be parked within 300 feet of an open fire.

§ 397.13 Smoking.

No person may smoke or carry a lighted cigarette, cigar, or pipe on or within 25 feet of—

(a) A motor vehicle which contains explosives, oxidizing materials, or flammable materials; or

(b) An empty tank motor vehicle which has been used to transport flammable liquids or gases and which, when so used, was required to be marked or placarded in accordance with the rules in § 177.823 of this title.

§ 397.15 Fueling.

When a motor vehicle which contains hazardous materials is being fueled—

(a) Its engine must not be operating; and

(b) A person must be in control of the fueling process at the point where the fuel tank is filled.

§ 397.17 Tires.

(a) If a motor vehicle which contains hazardous materials is equipped with dual tires on any axle, its driver must stop the vehicle in a safe location at least once during each 2 hours or 100 miles of travel, whichever is less, and must examine its tires. The driver must also examine the vehicle's tires at the beginning of each trip and each time the vehicle is parked.

(b) If, as the result of an examination pursuant to paragraph (a) of this section, or otherwise, a tire is found to be flat, leaking, or improperly inflated, the driver must cause the tire to be repaired, replaced, or properly inflated before the vehicle is driven. However, the vehicle may be driven to the nearest safe place to perform the required repair, replacement, or inflation.

(c) If, as the result of an examination pursuant to paragraph (a) of this

section, or otherwise, a tire is found to be overheated, the driver shall immediately cause the overheated tire to be removed and placed at a safe distance from the vehicle. The driver shall not operate the vehicle until the cause of the overheating is corrected.

(d) Compliance with the rules in this section does not relieve a driver from the duty to comply with the rules in §§ 397.5 and 397.7.

§ 397.19 Instructions and documents.

(a) A motor carrier that transports Class A or Class B explosives must furnish the driver of each motor vehicle in which the explosives are transported with the following documents:

(1) A copy of the rules in this part;

(2) [Reserved]

(3) A document containing instructions on procedures to be followed in the event of accident or delay. The documents must include the names and telephone numbers of persons (including representatives of carriers or shippers) to be contacted, the nature of the explosives being transported, and the precautions to be taken in emergencies such as fires, accidents, or leakages.

(b) A driver who receives documents in accordance with paragraph (a) of this section must sign a receipt for them. The carrier shall retain the receipt in his files for 1 year at his principal place of business. However, upon a written request to, and with the approval of, the Director, Regional Motor Carrier Safety Office, for the region in which a motor carrier has his principal place of business, the carrier may maintain the receipts at a regional or terminal office. The addresses and jurisdictions of the Directors of Regional Motor Carrier Safety Offices are shown in § 390.40 of this subchapter.

(c) A driver of a motor vehicle which contains Class A or Class B explosives must have in his possession and be familiar with, and be in compliance with

(1) The documents specified in paragraph (a) of this section;

(2) The documents specified in § 177.817 of Chapter I of this title; and

(3) The written route plan specified in § 397.9(b).

[49 FR 38290, September 28, 1984]

§ 397.21 Marking of vehicles operated by private carriers.

(a) *General.* A motor vehicle being operated by a private carrier of property must be marked as specified in

paragraphs (b) and (c) of this section if that vehicle—

(1) Is transporting hazardous materials of a kind or quantity that require the vehicle to be marked or placarded in accordance with § 177.823 of this title; and

(2) Is operating under its own power, either alone or in combination.

(b) *Nature of marking.* The marking must display the following information:

(1) The name or trade name of the private carrier operating the vehicle.

(2) The city or community and State abbreviation, in which the carrier maintains

its principal office or in which the vehicle is customarily based.

[47 FR 47836, Oct. 28, 1982, effective Nov. 29, 1982]

(3) If the name of a person other than the operating carrier appears on the vehicle, the words "operated by" immediately preceding the information required by paragraphs (b) (1) and (2) of this section.

Other identifying information may be displayed on the vehicle if it is not inconsistent with the information required by this paragraph.

(c) *Size, shape, location, and color of marking.* The marking must—

(1) Appear on both sides of the vehicle;

(2) Be in letters that contrast sharply in color with the background;

(3) Be readily legible during daylight hours from a distance of 50 feet while the vehicle is stationary; and

(4) Be kept and maintained in a manner that retains the legibility required by paragraph (c)(3) of this section.

The marking may consist of a removable device if that device meets the identification and legibility requirements of this section.

INSTRUCTIONS FOR THE
COMPLETION OF THIS FORM
ARE ON A SEPARATE SHEET.

THIS DOCUMENT MUST BE
USED FOR ALL MISSOURI—
DESTINED SHIPMENTS.

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Division of Environmental Quality
Waste Management Program
P.O. Box 1368 Jefferson City, Missouri 65102
314-751-3241

EMERGENCY RESPONSE:
U.S. COAST GUARD
1-800-424-8802
CHEM TREC
1-800-424-9300

HAZARDOUS WASTE MANIFEST

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page of	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address				A. Missouri Manifest Document Number		
4. Generator's Phone ()				B. State Generator's ID - other		
5. Transporter 1 Company Name		6. US EPA ID Number		C. Missouri Transporter's ID		
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone		
9. Designated Facility Name and Site Address		10. US EPA ID Number		E. Missouri Transporter's ID		
				F. Transporter's Phone		
				G. State Facility's ID		
				H. Facility's Phone		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers	13. Total Quantity	14. Unit Wt./Vol.
a.						L. Waste No.
						Missouri
						Other
b.						Missouri
						Other
c.						Missouri
						Other
d.						Missouri
						Other
J. Additional Descriptions for Materials Listed Above				K. Handling Codes for Wastes Listed Above		
a.						
b.						
c.						
d.						
15. Special Handling Instructions and Additional Information						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations and applicable state regulations.						
Printed/Typed Name				Signature		Date Month Day Year
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature		Date Month Day Year
Printed/Typed Name				Signature		Date Month Day Year
18. Transporter 2 Acknowledgement or Receipt of Materials				Signature		Date Month Day Year
Printed/Typed Name				Signature		Date Month Day Year
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.						
Printed/Typed Name				Signature		Date Month Day Year

MISSOURI DNR FINAL COPY — PART 1

THIS COPY MUST BE TRANSMITTED TO THE DEPARTMENT
AFTER ITS RETURN FROM THE DESIGNATED FACILITY.

ANNEX II

CONTINGENCY PLANS

1. Contingency plan for emergency during movement to quarry.
2. Contingency plan for emergency at treatment site.

ANNEX II - EMERGENCY CONTINGENCY PLANS

1. Contingency plan for an emergency occurring in route to treatment site:

During material movement from MDC to the treatment site, the following procedures will be utilized if an emergency situation develops.

A. Fire aboard explosives transportation vehicle.

If a fire develops aboard the explosives transportation vehicle, the following will be done:

- a. The person first noticing the fire will notify the transport driver of the fire and then the convoy leader. Location and size of the fire will be given.
- b. The transport driver will immediately move the transport vehicle out of the traffic and onto the shoulder or median. He will then dismount the vehicle, release the tractor, and move the tractor away from the fire. The assistant driver will dismount and fight the fire with the fire extinguisher until help arrives.
- c. The lead escort vehicle will assist in getting the transport out of the traffic and proceed forward to block all oncoming traffic. This road block will be a minimum of 1/2 mile from the transport vehicle. The lead escort will utilize the mobile radio or telephone to notify the State Police, Local Police and Local Fire Departments of the situation.
- d. The following escort vehicle will stop all traffic and provide assistance to the transport's assistant driver to fight the fire. The following road block will be a minimum of 1/2 mile from the transport.
- e. The fire will be fought by GSX personnel until (1) an explosion is imminent or (2) authorized fire department personnel arrive.

GSX SERVICES INC.

B. Automobile Accident

If an automobile accident occurs. All GSX vehicles will stop and render all aid possible.

The lead escort will notify State and Local Police of the accident, location and injuries.

Personnel will be prepared to fight any fires that may start or to evacuate the area if an explosion is imminent.

C. Detonation During Movement

If there is a detonation in the transportation vehicle during movement the following steps will be taken:

1. If possible move the transport out of traffic and onto the shoulder, and evacuate at least 1/2 mile around the vehicle. The transport vehicle will not be approached by any personnel except those specifically trained for the situation. The lead escort will notify state and local police, and fire and emergency teams of the situation.

2. Specially trained GSX personnel will approach the transport, ascertain the situation, and then develop a plan to remove any hazards and continue the operation.

2. Contingency Plan For Emergencies On-Site

If an emergency situation arises at the site the following procedures will be utilized.

Fire at the storage or treatment area.

1. The person first observing the fire will sound an audible alarm and begin to fight the fire.

2. The Project Manager, or whomever is closest to a phone, will notify local and state police, and fire units of the situation

3. All nonessential personnel will evacuate the site and meet at the guard house on the main road.

4. Fire fighting personnel will fight the blaze until authorized fire department personnel arrive or until an explosion is imminent.

5. First aid will be rendered to any victims, as required.

GSX SERVICES, INC.

If an unscheduled or accidental detonation occurs, the following procedures will be followed.

1. No GSX personnel except those specifically trained will approach the detonation site.
2. Personnel closest to a phone will notify local, state police and fire departments of the situation.
3. Specially trained GSX personnel will approach the site and ascertain the situation. Once this has been done, a plan of action will be decided upon and carried out.

GSX SERVICES, INC.

ANNEX III

HEALTH AND SAFETY POLICIES

The health and safety of all GSX on-site client personnel and state and federal representatives, as well as, the safety of the public and protection of the environment shall be of paramount importance. With this in mind, the general health and safety policies and procedures have been developed and implementation of these guidelines will be by the GSX Project Manager. These policies will take precedence over cost and scheduling of all site project activities. All GSX and MDC personnel, state, and federal representatives and visitors shall abide by these rules.

GENERAL SAFETY RULES

1. Prior to the start of each work day, a morning meeting shall be held for all GSX personnel. These meetings shall review necessary safety procedures, safe work practices, site evacuation and escape procedures, and the planned daily activities.
2. Provisions will be made for first aid for all on-site personnel. At a minimum, a first aid kit will be on-site. The location of the first aid supplies will be posted.
3. An emergency eye wash and deluge shower station will be provided for at active work sites.
4. Fire extinguishers and fire fighting equipment shall be provided for at active locations within the operations area. The fire extinguishers shall be at the ABC dry chemical types, minimum 20 lbs. Metal-X powder will be available for Class D fires.
5. All tools and equipment, where necessary, shall be spark proof, explosion proof and/or grounded and bonded.
6. Should site evacuation be necessary, one employee shall be assigned the duty of alerting all personnel on-site. A plan shall be developed for this event and shall be reviewed at morning meetings.
7. Parking of non-essential vehicles outside the designated parking area shall be prohibited since safe egress and ingress areas may be obstructed.
8. All personnel shall use one entrance from the project site. This shall be true with the exception of immediately life and health threatening situations.
9. The Project Manager shall have the authority to remove anyone from the site and prohibit his/her reentry should it be determined that the person threatens site security or the safety of on-site personnel.

GSX SERVICES, INC.

CONTROL OF SITE

Access to the site shall be restricted by a fenced boundary. The only exception to this shall be a life threatening situation.

A log of all contractors, subcontractors, state and federal representatives, and visitors shall be kept.

FIRE PROTECTION

Prior to the start of work at the site, all GSX personnel shall be instructed in basic fire safety including the use of hand-held fire extinguishers. Emphasis will be placed on detecting a fire, alerting other personnel with a predetermined alarm, and notifying local fire departments. This information shall be reviewed at morning meetings as necessary.

In the event of fire, it is imperative to prevent its spread. Most fires begin small and can be easily extinguished if discovered early. The greatest single cause of large fires is delayed discovery and/or incompetent action after discovery.

Each GSX person shall be competent in all of the above mentioned areas of fire fighting. Any GSX personnel discovering a fire shall use his voice to alert others while he/she locates the nearest fire extinguishers. Appropriate fire extinguishers shall be located in all active work locations. The second person on the fire shall alert all remaining personnel on site of the fire with a predetermined signal. Persons closest to the telephone shall alert the police and local fire departments. Due to the delay in fire departments arriving at the site, all available personnel shall locate appropriate fire extinguishers and aid in containing the fire. If the fire is estinguished, a garden hose or buckets of water shall be used to cool the area to prevent a buildup of heat and reignition of the area. Water shall not be used on water reactive materials such as combustibile materials (e.g., phosphorous compounds).

Water is the most commonly used fire extinguishing agent. Water is usually effective when it is applied in the form of fine droplets or spray. This has a blanketing action effect and avoids the difficulty of impact scattering of lighter material. Water shall be used if all available extinguishing agents are depleted and if it is used as a spray to smother the fire or to cool surrounding areas and already extinguished areas.

Fire extinguishers to be used at the site include dry chemical, CO₂ and Metal-X in the event of a combustibile metal fire. Fire extinguishers shall be located at all active work locations and on all heavy equipment. Inspections of available portable fire extinguishers shall be the responsibility of the Project Manager. Inspections shall be conducted daily

CONTINGENCY PLANS GENERAL

As with any movement or treatment operation for dangerous materials, may arise. The following basic safety rules will be observed and followed in the event the listed problems arise.

1. All personnel will be briefed about possible hazards of the transported materials
2. Due to toxic fumes released by a fire involving the explosives, all personnel fighting the fire must have self contained breathing apparatus. (MSA 401)
3. The convoy leader will determine how long the fire can be fought by GSX personnel.
4. GSX personnel will render whatever aid possible to victims of the accidents.
5. State and local police, and fire and emergency response units will be notified only prior to movement and during an actual emergency.
6. Only to save a life will the following procedures be violated.